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THE Origin and Significance OF POSTURAL (ORTHOSTATIC) ALBUMINURIA.

BY JAMES W. RUSSELL,* M.D. CAMB., F.R.C.P. LOND.,

PHYSICIAN TO THE BIRMINGHAM GENERAL HOSPITAL; JOINT PROFESSOR OF MEDICINE IN THE UNIVERSITY OF BIRMINGHAM.

By the term postural (or orthostatic) albuminuria I mean nothing more than an albuminuria which develops in the upright position and ceases when the patient lies down. It is commonly used to imply a special form of albuminuria, "functional" or mechanical in origin, constituting a more or less defined clinical condition and tending to affect a special type of patient—children or young adults, often of poor physique, with low blood pressure and cold extremities, excreting globulin in excess of albumin. Whilst admitting the convenience of using the name only for the cases in which urine secreted in bed is free from albumin, I do not agree that the condition is always "functional" in nature, or is to be found in any particular type of patient, and I think that the limitation of the conception of the effect of posture on albumin excretion to the cases in which the bed urine is entirely free from albumin robs the symptom, as I would prefer to regard it, of much of its significance. The object of this paper, the outcome of five years' study of the subject, is to bring forward evidence in favour of the view that many cases of purely orthostatic albuminuria are the result of infection, and secondly to establish the point that the orthostatic reaction, in the true sense of the term, is common alike to the supposedly functional cases and to most, if not all, cases of nephritis, and, indeed, possibly to most forms of albuminuria.

In the *Quarterly Journal of Medicine*, January, 1923, I published a study of a series of cases of orthostatic albuminuria, based upon graphic records of the albumin output. The results were not altogether in accordance with the views usually held as to the functional nature of these cases, and it was especially noted that the orthostatic response, in nearly all its features, was met with in certain cases of mild nephritis. On this, as well as on other grounds, the provisional suggestion was made that orthostatic albuminuria might, in some instances at any rate, be the outcome of a past renal infection of mild degree. Since writing that paper I have continued to investigate all the cases of the condition occurring in my wards and in private practice, and I have now some fresh evidence to offer in support of the suggestion.

METHOD OF MEASUREMENT OF ALBUMIN.

The albumin measurements recorded in the *Quarterly Journal* and in the present communication have all been obtained by the method of estimation described in detail in the former paper, and more briefly in THE LANCET of Oct. 27th, 1923. Its advantages are that it makes possible the measurement of any quantity of albumin, down to the smallest trace. It would take too long to repeat here the description of the method. I may merely say that it depends upon the number of dilutions needed to reduce a cloud of coagulated albumin to the point at which it matches a standard haze. Further that the standard I now use is made by mixing together half a cubic centimetre each of a 0·014 per cent. solution of barium chloride and magnesium sulphate respectively, and adding, after the haze has developed, 10 c.cm. of distilled water pigmented so as to imitate the colour of a pale urine. (The solutions are kept in bottles previously treated with strong hydrochloric acid in order to neutralise the alkali of the glass.) The haze so produced constitutes the "unit" of albumin, and is practically the smallest haze recognisable in a good light against a dark background. For various reasons it is inadvisable to assign to the unit any absolute value. The object aimed at is the study of the relative output of albumin under different conditions and at different times; the absolute amount passed is rarely a matter of importance. Indeed, it is open to each observer to work with the unit with which he feels that he can obtain the most accurate results, and with myself this is the smallest recognisable haze. Although, in order to save reproduction, only two charts are included in this paper, all the cases recorded have been studied by means of exact observations obtained in this manner.

THE ORTHOSTATIC REACTION.

I will not burden my paper with any long account of the natural history of the orthostatic reaction. It will be enough to enumerate the chief features, as follows: The urine secreted in bed is ordinarily free from albumin, whilst that of the upright position is more or less albuminous, the amount of albumin varying directly with the time spent in the upright position, and in inverse direction, though not, I think, exactly in inverse amount, with the quantity of urine in process of secretion. Artificial lordosis, produced in bed by means of pillows, may or may not give rise to the passage of albumin, but standing upright usually, and standing in the position of lordosis invariably, produces an albuminuria, except during a period of diuresis. Standing in the leaning forward position abolishes the excretion of albumin.

SOURCES OF FALLACY.

There are two sources of fallacy with which I must deal before recording my evidence, inasmuch as they often interfere with the recognition of cases that are strictly orthostatic in nature, and one, at least, may easily lead to misinterpretation of my results.

(1) It is usually held that the urine passed immediately on getting out of bed by a patient suffering from orthostatic albuminuria is invariably free from albumin, and that any deviation from this behaviour excludes the case from the orthostatic group. But this statement is untrue of many genuine cases, and for an obvious reason. The albuminuria set going by the upright position continues, and sometimes increases, for half an hour or more after the return to bed, and Chart 1 shows what often happens when a patient, the subject of a postural albuminuria, gets out of bed, stands for a few minutes, and then resumes the lying-down position. In this case a boy with an obvious orthostatic albuminuria got out of bed and passed albumin-free urine. He then stood for seven minutes, returned to bed, and passed urine as soon as possible afterwards. This urine was highly albuminous. Twenty minutes later he again passed urine, being still in bed, and this urine was yet more albuminous than before. An hour after the return to bed a trace of albumin was still present. An actual increase in the albumin excretion on lying down does not always occur, and probably does not take place at all when the patient goes to bed at the end of the day with a definite albuminuria. (This he generally does, for the cessation of the albuminuria during the late afternoon and evening, supposed to characterise the orthostatic cases, is, according to my experience, altogether the exception.) But the albuminuria with which he goes to bed continues for half an hour or more after lying down, though gradually diminishing, and the retention in the bladder of this albuminous urine contaminates the night's collection and registers itself in the morning urine as a definite haze. The case is then apt to be wrongly rejected as one in which the albuminuria is not of the orthostatic variety.

This point is of sufficient importance to bear illustration by two cases.

* An obituary notice of the late Dr. Russell, who died shortly after this paper reached us, appears in another column.—ED. L.

A lad, aged 16, in whom an albuminuria had been discovered on routine examination preliminary to application for admission into the Air Force, was admitted into the Birmingham General Hospital under Dr. L. G. Parsons, to whom I am indebted for the opportunity of examining him. The albuminuria had been regarded as almost certainly of the postural variety, but a small amount of albumin had been persistently present in the night's collection of urine—he was up and about all day. On May 2nd-3rd the following observations were made:—

	c.cm. urine.	Albumin units.
9 P.M.—On going to bed	20	375
11 P.M.—Two hours after lying down	120	18
7 A.M.—On getting up	230	0
9 A.M.—Two hours up	30	220

On this occasion the bladder was emptied afresh two hours after going to bed and the morning urine was then free from albumin. Had the 11 P.M. urine been retained, the morning specimen would have contained from 6 to 7 units of albumin, a small, but quite recognisable haze.

CHART 1.

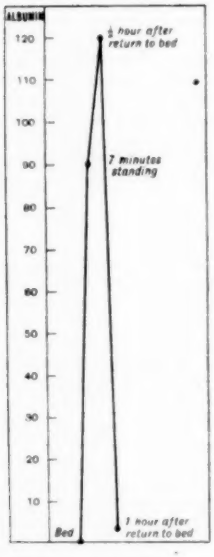
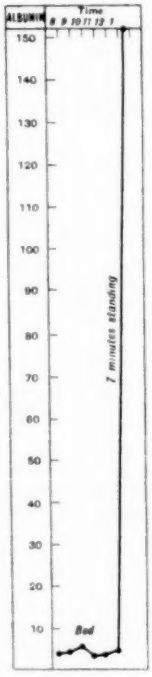


CHART 2.



The second case was that of a girl, aged 11, who was in my ward in May, 1924, with a postural albuminuria of large degree. A year later she was readmitted for further investigation, and now the morning urine regularly contained a haze of albumin. But on April 11th, after being up all day, she went to bed with an albuminuria of 90 units, and an hour later was made to pass urine again. Next morning the night's collection was entirely free from albumin.

This source of fallacy will receive further illustration in others of my cases. It is one that is not, I think, generally recognised, but unless it is kept in mind many strictly orthostatic cases will pass undiagnosed.

(2) The second source of fallacy lies in the fact that during diuresis the upright position loses its effect on the excretion of albumin. For this reason in a suspected orthostatic case it is never safe to depend upon the absence of albumin from a single plentiful specimen of urine. And even in the absence of diuresis it must always be remembered that the sitting posture also abolishes the albuminuria.

INFECTIVE ORIGIN OF MANY CASES OF ORTHOSTATIC ALBUMINURIA.

In the paper already referred to the first case studied was that of a girl in whom the albuminuria had first been discovered immediately after an attack of diphtheria. I have now to bring forward evidence pointing to a connexion between the orthostatic condition and a past attack of scarlet fever. I am aware that the origin of the condition in a former attack of scarlatinal nephritis has often been suggested, but, as will be seen, that is not exactly my contention.

CASE 1.—I am indebted to Dr. H. Savage, my former house physician, for bringing this case to my notice, and for permission to publish the details. The patient was a girl, aged 8, who was seen by him when in practice in Coventry. Two months previously the child had been admitted into the Fever Hospital with an attack of scarlet fever, and she was discharged at the end of six weeks, without any known abnormality of the urine. A week after her return home she was brought to Dr. Savage with œdema of the left leg and the left side of the face; the urine contained a thick cloud of albumin, and casts were found in the deposit. The girl was put to bed, and the œdema and albuminuria at once came to an end. After a further period of rest in bed the œdema did not return on getting up, but from that time, whilst the bed urine was invariably free from albumin, 10 minutes' standing always produced a definite cloud. On Dec. 2nd, 1923, some four months after the onset of the fever, two specimens of urine were brought to me for examination. One, passed immediately after getting out of bed in the morning, was quite free from albumin. The other, passed soon after standing upright for 10 minutes, contained 110 units, a fairly thick cloud. On occasions, during the next 12 months, further specimens were examined with the same result, but by the end of 1924 the immediate response to standing had practically ceased. Whether or not the urine of the rest of the day was albuminous I do not know, as the case passed out of reach.

CASE 2 was that of a young man, aged 25, who contracted scarlet fever in the army in 1918. He was treated for six weeks in the Fever Hospital, and was discharged without any suspicion of renal disease. A fortnight later he was examined for some routine purpose and albumin was discovered in the urine, and eventually he was discharged from the army with the diagnosis of nephritis. From that time onwards his doctor had found an "intermittent albuminuria." He consulted me in May, 1925. The blood pressure was 85/142, but I thought that the rather high systolic reading might be partly the result of excitement. The heart was not recognisably enlarged and I could find no casts in the urinary deposit. On May 23rd he sent me a series of specimens of urine passed at hourly intervals throughout the morning, together with one passed on going to bed the night before, with the following results:—

	c.cm. urine.	Albumin units.
11 P.M.—On going to bed	42	90
8 A.M.—On getting up	300	6
9 „	35	70
10 „	46	65
11 „	40	70
12 noon	55	36
1 P.M.	50	28

The trace of albumin in the early morning specimen is easily explained by the fact that the urine was heavily loaded at bedtime the night before, and the bladder had not been emptied again during the night.

The two following cases suggest that a definite scarlatinal nephritis may ultimately be represented by a postural albuminuria.

CASE 3.—A girl, aged 13, was sent into my ward on account of an albuminuria discovered in the out-patient room. Two years previously she had had an attack of scarlet fever and her mother was informed that the kidneys were slightly affected and that the urine was "not quite right." The albuminuria was entirely postural in occurrence, though the immediate response to standing was but slight.

CASE 4 was that of a young man, aged 24, who consulted me for "nephritis." At the age of 10 he had had an attack of scarlet fever which was not at first diagnosed. In consequence he went about for some days and a nephritis developed. From that time albumin had been almost always found in the urine, and a year ago a very serious prognosis had been given. When I saw him in May, 1924, he was somewhat pale and complained of being easily tired. The heart was not enlarged and the blood pressure was 80/130. The urine passed in my room contained a cloud of albumin, but neither in this specimen nor in others subsequently examined was I able to find any casts. Next morning the urine passed on getting out of bed contained 8 units of albumin, and 10 minutes' standing produced a dense cloud of over 500 units. On other occasions the same trace of albumin was found in the bed urine, but that this was due to the continued excretion of albumin during the first period

after getting to bed at night is shown by the fact that on one occasion when the bladder was emptied afresh an hour after lying down the urine next morning was absolutely albumin-free.

Post-Scarlatinal Orthostatic Albuminuria.

These cases seem to suggest, not only that a scarlatinal nephritis may eventually be represented by a postural albuminuria, but that the same condition may sometimes occur after an attack of scarlet fever in which no question as to the soundness of the kidneys has been raised during the period of retention in bed, and I thought that some further information might be obtained at the fever hospital. I accordingly took the problem to Dr. E. H. R. Harries, the medical superintendent of the Birmingham Fever Hospitals, and he most kindly gave me every facility for investigating the matter. He referred me to Dr. W. M. MacFarlane, the medical superintendent of the Lodge-road Scarlet Fever Hospital, to whom I am much indebted for placing two children's wards at my disposal, as I am also to the sisters and nurses in charge of the wards for much trouble taken in procuring the necessary specimens. Dr. MacFarlane allowed me to examine a series of specimens of urine passed some three hours after getting up in the morning by a number of children convalescent from scarlet fever, none of whom had shown any sign of albuminuria so long as they had remained in bed. On the first occasion on which this was done 16 urines were collected for my examination, and of these four contained a material quantity of albumin. Three of the albuminurias proved to be fleeting; at any rate, no albumin was discovered in any of the three two days later. But the fourth gave on that day a definite response to the standing test, the bed urine being albumin-free, and an hour later a larger albuminuria had developed. This boy went home next day, the subject, for the time at all events, of a moderate postural albuminuria.

I have now examined the urines of 83 of these children, the conditions being exactly similar in each case. Of these 83 urines, 22 contained a considerable quantity of albumin on the first examination; I have omitted several others in which the amount of albumin was very small. Seven of the 22 patients went home to my knowledge with an albuminuria of the orthostatic type, found to be present on more than one occasion, and I have added to the list five others in whom discharge from hospital prevented me from making more than one examination. The rest I have discarded—three because no albumin was found on a second examination, and others because the second examination showed only a small amount. In discarding all these I am probably altogether understating my case, for a single negative or slight result is rarely safe ground for excluding an orthostatic albuminuria, but it is better to err on that side. What has especially struck me has been the unvarying regularity with which these albuminurias have been found. I paid in all nine visits to the fever hospital and examined on an average nine urines at each visit. There was not a single occasion on which I did not obtain from two to four or more positive results. As will later be stated, such results have not been obtained in examinations made in other conditions. Particulars of the cases that have not been discarded are as shown in the table fo'lowing.

The slight bed albuminurias noted on single occasions in Cases 3, 4, 5, and 7 have probably the usual explanation of contamination by the albumin excreted shortly after getting to bed the night before, for in all these cases on another day, or on other days, this urine has been found to be free from albumin. Case 9, with a slight bed albuminuria, rests on a single examination, but the same explanation probably holds. It has not been possible, however, to put the explanation to the proof which I have applied to such cases in my own wards. It is further to be regretted that I have not so far been able to follow up the after-history of these cases. There are considerable difficulties in the way, but, should opportunity offer, I shall avail myself of it. It may be, of course, that some or even all of the albuminurias may have cleared up after the return home, and this gap in the evidence is unfortunate. But the results may fairly be looked at in connexion with the first and second of my recorded cases. In these an exactly comparable orthostatic albuminuria was discovered a week and

No. of case.	—	Units of albumin in bed urine.	Units of albumin after getting up.
1	May 24th	—	Cloud (not measured).
	,, 26th	0	9 after standing.
			20 an hour later.
2	June 7th	0	240 3 hours up.
	,, 14th	0	75 1 P.M.
			11 4 P.M.
			13 7.30 P.M.
3	,, 7th	0	130 3 hours up.
	,, 8th	0	100 1 P.M.
			50 4 P.M.
			40 7.30 P.M.
4	,, 20th	35	380 3 hours up.
	,, 28th	0	100 ,,
	July 5th	0	100 ,,
5	June 28th	0	130 ,,
	July 5th	0	140 ,,
	,, 12th	7	95 ,,
	,, 19th	0	160 ,,
6	June 28th	—	180 2 hours up.
	July 7th	0	55 3 hours up.
7	,, 12th	9	120 ,,
	,, 19th	0	7 ,,
			(Urine plentiful).
8	,, 12th	0	300 3 hours up.
9	,, 12th	15	210 ,,
10	,, 25th	0	60 ,,
11	,, 25th	0	36 ,,
12	,, 25th	0	48 ,,

a fortnight respectively after discharge from hospital, and the albuminuria is known to have persisted for at least a year in the one case and for seven years in the other.

These cases seem to establish the fact that patients who have passed through an attack of scarlet fever without showing any albuminuria so long as they remain in bed, not infrequently develop, at any rate for a time, an orthostatic albuminuria on getting up. The interpretation remains for discussion. Four possibilities occur to me—there may be others of which I have not thought. The explanation may be one of coincidence, and all these patients may have been the subject of an orthostatic albuminuria previous to their attack of scarlet fever. Or, again, it may be that in any series of children getting up after a few weeks' illness in bed, a certain number will develop a temporary postural albuminuria—a sort of protest by the kidney against resuming work under harder conditions.

The only way of testing the truth of these suggestions is by examining a control series of children, roughly of the same age, convalescent from illnesses other than those due to specific infections. This I have attempted to do, but it has been difficult to obtain any material number of suitable cases, and for most of those that I have been able to examine I am indebted to my colleague, Dr. K. D. Wilkinson, who has found them for me at the Children's Hospital. I have now examined 35 cases and have found amongst them three instances of albuminuria of the orthostatic type. Two of these children had been in the fever hospital a few months previously with an attack of scarlet fever, and may, I think, fairly be excluded. The third had an active suppuration of the glands of the neck, and was therefore not really convalescent from her infection. If I accept this case as an example of coincidence and not the result of infection, I get a percentage of 3·1 positive results

amongst these children, as compared with one of 26·5 amongst similar single examinations made in the convalescent scarlet fever cases. If I give the decision wholly, and, I think, wrongly against myself, and include the two children who had recently been discharged from the fever hospital, the percentage is 8·6 against 26·5. I do not think, therefore, that either of the above suggestions will account for my results. I suppose that a third explanation might lie in some obscure vaso-motor effect of the scarlatina. But such an explanation seems too vague for serious discussion, unless one starts out with the assumption that orthostatic albuminuria must necessarily be functional in nature, and it is this assumption that I am combating.

The only other explanation that I can see is one that falls in with the impression that has gradually grown up in my mind as the result of a long study of the orthostatic reaction—namely, that this type of albuminuria is in many cases the expression of a past renal infection of mild degree, and the suggestion would then be that in these post-scarlatinal postural albuminurias we are meeting with the very smallest degree of infection of the kidney. The conception of an infection so slight that it never translates itself into an albuminuria so long as the patients are kept in the horizontal position may seem far-fetched, but I can see no inherent impossibility in the idea. It postulates a damage to the kidney far short of anything so far described in the post-mortem room, but such degrees of damage must surely exist. Whatever the explanation, the facts are as I have stated them.

My results raise a further question—namely, whether it is not possible that cases of orthostatic albuminuria, with no known history of scarlet fever, may yet have had a scarlatinal origin. Dr. Harries tells me that in his opinion many cases of scarlatinal infection probably pass unrecognised as an "ordinary" sore-throat without rash. If that is so, the absence of a history of scarlet fever in genuine post-scarlatinal orthostatic cases would be easy to understand. We are accustomed to speak of the "adolescent type" of albuminuria, as though it were only to be expected that the adolescent kidney should at times leak albumin. I see no reason why the adolescent kidney should behave in this manner, but I do recognise that childhood and adolescence are the periods of special susceptibility to specific infections.

THE CONNEXION BETWEEN ORTHOSTATIC ALBUMINURIA AND PREVIOUS SCARLATINAL NEPHRITIS.

The connexion between orthostatic albuminuria and a past attack of scarlatinal nephritis has been previously suggested. Bass,[1] in 1912, gave an abstract of three papers dealing with the subject. Weiss-Eder [2] allowed 40 children with scarlet fever to kneel in a position of lordosis, with the result that 23 developed an albuminuria. The writer concludes that children convalescent from scarlet fever are not more disposed to nephritis than other children, and that such children, having nephritis, often show an orthostatic albuminuria, "which may be due to weak muscles." Nothman [3] found that 12 out of 13 cases of scarlet fever in which at an earlier date the lordotic experiment was positive, albumin appeared later in the urine, but that in those in which lordosis did not cause albuminuria, albumin never appeared spontaneously later on. He concludes that, just as nephritis may terminate in orthostatic albuminuria, so conversely an orthostatic albuminuria may be the first sign of nephritis. Schick [4] says that orthostatic albuminuria following scarlet fever has a good prognosis, and refers to Jehle, who examined 17 children in various stages of scarlet fever. In 12 there occurred a marked albuminuria in the position of lordosis, upright and prone, but none developed a nephritis. In each case I quote from Bass's abstract.

[1] American Journal of Diseases of Children, 1912.
[2] Wiener med. Wochenschrift, 1909, No. 18.
[3] Arch. f. Kinderheilk., No. 49.
[4] Nothnagel's System, p. 141.

On the other hand, Hansborg,[5] of the Blegsdam Fever Hospital, Copenhagen, after a very careful study of the after-history of a large number of patients who had suffered from scarlatinal nephritis, rejects the idea that there is any special connexion between such nephritis and the subsequent development of orthostatic albuminuria. Among 226 children and young people, who had all had scarlatinal nephritis, he found 23 (10 per cent.) with orthostatic albuminuria, "which is even a lower figure than is generally quoted in examinations of arbitrarily chosen individuals of the same age" (I quote from a translation). I gather, therefore, that Hansborg looks upon these patients as likely to have been the subjects of an orthostatic albuminuria previous to their attack of scarlet fever. While holding that no single explanation hitherto propounded accounts alone for the condition, he supports the usual view that lordosis plays, at any rate, a chief part in its causation, though he admits that in only 6 of his 23 cases was a "pathological" lordosis to be discovered. But, he adds, "what can be considered as pathological here must be a matter of expert opinion."

While it is desirable to include a reference to these various opinions, it is to be noted that they largely deal with two matters with which my paper is not particularly concerned—namely, the occurrence of orthostatic albuminuria as the result of scarlatinal nephritis, and the effect of artificial lordosis in patients convalescent from scarlet fever. My point is that this type of albuminuria appears to develop on getting up in patients who have not shown any sign of nephritis during rest in bed, and for this it has not been necessary to assume any position of lordosis, which, after all, is only the extreme of the upright position. That lordosis is the essential cause of orthostatic albuminuria I do not believe. The evidence in its favour has never seemed to me very conclusive, and so many of my cases have shown an absence of material lordosis on X ray examination that I have long discarded it as an adequate explanation. Hansborg's cases, again, hardly seem to afford it much support. It may be, however, that there is a type of case into the causation of which it enters, as suggested at the end of my paper.

INFECTIONS OTHER THAN SCARLATINAL.

I come now to infections other than scarlatinal. I have already alluded to a case in which the condition was discovered immediately after an attack of diphtheria, and Dr. Chalmers, of the Little Bromwich Fever Hospital, very kindly collected for me one day the urines of 18 children convalescent from diphtheria; out of over 300 cases then in hospital these were the only ones in which no albumin had been discovered during the bed period. The children had all been up three hours, and the urines were therefore strictly comparable to those of the scarlet fever series. In these 18 urines I found one with a big albuminuria (560 units) in the upright specimen, the bed urine being albumin-free. One other urine showed a trace of albumin comparable to those discarded in the scarlet fever cases. These observations are again opposed to the explanation of the post-scarlatinal orthostatic albuminurias on the ground of coincidence. I know of a man, 49 years of age, with a postural albuminuria who dated his condition from an attack of syphilis occurring many years previously, and I have come across the case of a woman with an albuminuria of the same type who had had eclampsia two years ago. But both of these cases rest on a single examination only, and I cannot attach any great importance to them. Lastly, I have under observation two boys who were in my ward with a mild attack of acute nephritis of ordinary type, and who left hospital with a bed urine that was almost free from albumin and a big upright albuminuria. They were readmitted for 24 hours, three and two years respectively after their acute attack. In one the bed urine was nearly, but not quite, free from albumin; in the other no

[5] Acta Medica Scandinavica, Feb. 12th, 1925.

trace of albumin was found in the bed specimen. Both developed a large albuminuria immediately on getting up. While, therefore, I think that there is a special tendency for orthostatic albuminuria to develop, at any rate for a time, in patients getting up after an attack of scarlet fever, I am far from holding that the reaction is specific to that infection.

Two further points have impressed me as possibly bearing on the question of the infective origin of orthostatic albuminuria. The first is the frequency with which cases come under notice on account of symptoms of ill-health. A certain number of my cases have been discovered on routine examination for some purpose or other, but the majority have come complaining of headache, fatigue, lassitude, and occasionally some little swelling of the face. With a few days' rest in bed these symptoms have disappeared or a slow improvement has taken place. Secondly, it not uncommonly happens that a case in which such symptoms are present on admission shows at first an exaggerated response to the upright position, which also diminishes with rest in bed. For example, a boy, aged 13, was admitted from the out-patient room complaining of general ill-health. On Nov. 29th, 1924, seven minutes' standing gave rise to an enormous albuminuria (650 units), whilst on Dec. 1st eight successive hourly specimens passed in bed were all entirely free from albumin. A fortnight later he was up with quite a moderate albuminuria—a maximum of 40 and 50 units, whilst standing now produced but a small response. But I would add that the variations in the response to the upright position in these cases are often so extraordinary that I must not attach too much importance to an apparent improvement such as is shown in this case. It may be that a few more observations would have upset the conclusion, and I have one case in mind in which a similar apparent improvement was suddenly reversed during the patient's stay in hospital.

RELATIVE PROPORTIONS OF GLOBULIN AND ALBUMIN.

I may briefly refer to the question of the preponderance of globulin over albumin in the urine, almost universally accepted as marking off the orthostatic cases from those of albuminuria of organic origin. My experience does not support the distinction. Certainly, if it holds, the organic nature of most of my cases of orthostatic albuminuria is definitely proved, but the relationship seems to me altogether too variable for use in diagnosis. I am far from denying that in the great majority of cases of nephritis albumin is enormously in excess of globulin, but I have come across a few cases of definite acute nephritis in children in which the reverse relationship has been present. On the other hand, of 11 apparently non-scarlatinal cases of orthostatic albuminuria in which I have kept notes on the point, in four globulin was in excess, and in the remaining seven a big excess of albumin was registered. In the scarlatinal cases examined at the fever hospital the same inconstancy of relation was noted. Two of the urines showed an undoubted excess of globulin, but in most of the others there was an equally undoubted preponderance of albumin. I did not, however, remember in every case to make the necessary observations. Each of the two positive diphtheritic cases showed an excess of globulin.

POSTURAL ALBUMINURIA A SYMPTOM.

I began by stating that I would regard postural albuminuria as a symptom only, and that the limitation of the term to the cases in which the bed urine is entirely free from albumin, convenient as it may be, tends to rob the symptom of much of its significance. The fact is that in many, and possibly all, forms of albuminuria the albumin output is susceptible to the influence of posture, though in very varying degrees in different cases. This is, I think, certainly true of the "parenchymatous" varieties of nephritis, acute and chronic, and several of the charts published in the *Quarterly Journal* show an albuminuria in mild acute nephritis which came down to a very small amount with the patient in bed, but was present in gross quantity in the upright position. I would therefore regard the complete cessation of albumin excretion in the horizontal position, characteristic of "orthostatic albuminuria," merely as the extreme example of the influence of posture. The following records are taken from the case of a man with chronic nephritis, a somewhat raised blood pressure, and numerous casts in the urine:—

	Albumin units.	
On going to bed	1100	
One hour after going to bed	120	(urine plentiful)
On getting up next morning	550	(urine concentrated)
Three hours after getting up	700	
Seven hours after getting up	1275	

The very big drop in albumin content an hour after going to bed is to be somewhat discounted by the fact that during the hour a plentiful urine was secreted, and, on the other hand, the relatively high morning reading is largely accounted for by the concentration of the urine of the rest of the night, due, of course, to the absence of fluid intake. But the influence of posture seems undeniable. Whether this influence is exerted in the chronic interstitial types of nephritis I am not so certain, but this is a matter which I have not carefully investigated.

Finally, cases are met with in which the albuminuria is almost, but not quite, "orthostatic" in nature, and these seem to me to form a possible connecting link between the completely orthostatic cases and cases of nephritis responsive to posture. Chart 2 (p. 684) gives an example of such a case. The patient, a boy aged 14, was in fairly good health when one day he fainted at school. Examination of the urine showed a large cloud of albumin, and he was put to bed, with the result that the albuminuria at once very nearly came to an end, but never quite ceased. When I saw him he had been in bed for some weeks. The blood pressure was a shade high for the age (130, systolic), but no casts were at any time found in the urine. As shown in the chart (one record out of many is alone included), he was intensely sensitive to the upright position, and seven minutes' standing always produced a big response. When he got up in the morning a very large albuminuria developed, but getting up in the afternoon gave a much smaller result—an approach to the "cyclical variation." Yet the bed urine invariably showed a slight albuminuria. It is difficult, I think, on this ground to separate the case from the more complete forms of postural albuminuria.

I do not claim that all cases of orthostatic albuminuria have the same or a similar origin. I believe that cases exist in which the symptom is due to mechanical embarrassment, possibly of the left renal vein, and in THE LANCET of Oct. 27th, 1923, I have myself recorded a case of unilateral œdema with an albuminuria probably coming from one kidney only, for which I suggested a purely mechanical explanation. Will it eventually be found that the cases of mechanical origin are those in which the albumin comes from one kidney only? A certain number of cases of orthostatic albuminuria have been recorded in which catheterisation of the ureters has demonstrated that this was the case. I have some suspicion that these may prove to be the really "functional" cases, and that they own a totally different pathology from that of the cases dealt with in this paper. It may be that here lordosis is of importance. I may add that in five of my orthostatic cases I have tried by postural experiments—standing leaning first to one side and then to the other—to obtain evidence of the unilateral origin of the albuminuria, but in none has there been any material difference in the results.

SUMMARY AND CONCLUSIONS.

1. Many patients suffering from scarlet fever, who present no albuminuria during the period of rest in bed, develop an orthostatic albuminuria immediately after getting up. Some, at any rate, of these albuminurias persist for a considerable time, or even permanently.

2. Some cases of recognised scarlatinal nephritis are ultimately represented by an albuminuria of the orthostatic type.

3. Orthostatic albuminuria may follow other forms of specific infection, or even, though rarely, arise as the end-result of a mild acute nephritis of ordinary type.

4. The proportions of serum globulin and serum albumin are not constant in cases either of orthostatic or nephritic albuminuria, and do not enable a differential diagnosis to be made.

5. It is suggested that in many cases the orthostatic reaction is the result of slight renal damage. But cases probably exist in which the reaction is the result of mechanical causes. As a matter of speculation, it is suggested that in these cases the albumin comes from one kidney only.

6. Some response to posture occurs in most cases of nephritis, and possibly in all forms of albuminuria. All degrees of diminution of the output of albumin during rest in bed are met with, down to the complete cessation of the typical orthostatic cases.

7. Orthostatic albuminuria is probably of more frequent occurrence than is generally supposed. It may pass unrecognised owing to (1) the presence of a small quantity of albumin in the morning specimen of urine, due to the continuance of the upright albuminuria for half an hour or so after going to bed the night before, and the consequent contamination of the night's collection; (2) the cessation of albumin excretion during diuresis, even in the upright position; and (3) the cessation of albumin excretion in the sitting position. Extreme variations in the albumin output, with at times complete cessation, are therefore to be expected.

An Address
ON THE
CURES OF ÆSCULAPIUS.

Delivered to the Students of Westminster Hospital at the Opening of the Winter Session

BY PROF. ERNEST A. GARDNER, LITT. D.,
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AN interesting chapter in the history of ancient medicine is offered by the cures of Æsculapius, or Asclepios, as the Greeks called him; and the subject is one upon which the students of medicine and archæology meet upon common ground. It has been much discussed whether the priests and descendants of Asclepios, the Asclepiadæ, were the depositories of a traditional skill in medicine and surgery; and in this connexion we must remember that Hippocrates himself was one of the Asclepiadæ, of Cos. The remains of an enormous plane tree in the market-place of the town are still shown to visitors as the place where he gave consultations to his patients The sacred precinct of Asclepios at Cos is situated in a delightful position on a terrace overlooking the sea, and there it is still possible to trace the remains not only of temples and altars, but also of the rows of cells which must have served as quarters for the invalids who came to consult the god or his attendants. Many such shrines of Asclepios existed upon various sites in ancient Greece, most of them in similar positions and surroundings. But two of these are of especial interest to us because we have actual records in literature and inscriptions of the method of consulting the god and the means by which cures were effected. These two are at Athens, where the precinct underneath the south side of the Acropolis referred to by Aristophanes may still be seen; and at Epidaurus, where there have been found not only the remains of the buildings, but two of the six great slabs mentioned by the traveller Pausanias as recording the cures effected by the god.

These two precincts of Asclepios were very similar in their arrangement, though that at Epidaurus was by far the more extensive. Both alike contained more than one temple and one great altar of sacrifice, as well as springs or sacred wells. But the most distinctive building in each was a large portico in two floors, partly closed and partly open to the air, and it was in this building, called in inscriptions the "abaton," that patients who came to be cured spent the night. How they spent it may be partly judged from the well-known description in the Plutus of Aristophanes; for though this description is of course burlesque, and may well appear lacking in reverence, it must have had sufficient resemblance to what actually took place to give point to the jests. In the play Plutus (Wealth) is represented as blind, and his friends resolve to take him to the shrine of Asclepios in Athens "to help him of his blindness." The slave Karion, who attends him during his visit, gives a full account of it, which may be summarised as follows:—

"First we took him to the sacred spring and washed him; then we entered the precinct of the god, and after offering cakes and the other preliminary sacrifices, we duly put him to bed, among a number of others suffering from divers diseases, and we ourselves had shakedowns beside him. Then a minister of the god came in and put out the lights and bade us go to sleep, and keep silent if we heard any sound. So we all lay quiet. But I could not get to sleep, and I saw the priest going round the sacred tables and altars, picking up the figs and cakes and consecrating them into a bag. Then the god appeared, accompanied by his two attendant maidens, Iaso and Panacea. I hid my head under my cloak in fear, but I watched through the holes in it. And I saw the god going the round of the cases in due order, and an acolyte set beside him a stone pestle and mortar and a medicine chest. He first approached Neoclides, a blind man who excels those who can see at thieving, and he mixed and ground an ointment for him of garlic and fig-juice and squills with vinegar, and anointed his eyelids, turning them back to increase the smart. And the patient shrieked and cried out and tried to run away; but the god laughed and told him to sit still with his plaster. Then he came to Plutus and sat beside him, and first he felt his head, then he took a clean napkin and wiped his eyelids; and Panacea covered his head and face with a purple cloth. Then the god whistled, and two enormous snakes issued from the temple and gently crept under the cloth, and as it seemed to me, licked round his eyelids; and immediately Plutus stood up with his sight restored; and I clapped my hands for joy, and the god vanished with his snakes into the temple. And those who were lying beside Plutus congratulated him and remained awake all night till dawn."

Here we see many of the incidents that are repeated in the records of the cures at Epidaurus; but there is some confusion in both cases as to what actually took place and what was seen in a vision or a dream. But in the Plutus it seems distinctly to be suggested that the priest of Asclepios actually personated the god, a custom not at all unusual in Greek religion; and we know from other sources that large snakes were usually kept in the shrines of Asclepios, and were even in some cases regarded as the god himself.

ANCIENT GREEK RECORDS.

Before proceeding to enumerate the cures recorded at Epidaurus, a few words must be said as to the documents on which they are recorded. These are large slabs of marble headed "Cures of Apollo and Asclepios," discovered and first edited by M. Cavvadias, the Greek Inspector-General of Antiquities. Among medical authorities who have written about them, I would especially mention Sir Clifford Allbutt, Dr. Caton, and Dr. Alexander Cavvadias, son of their discoverer. The slabs were inscribed some time about 300 B.C., but they cannot be regarded as contemporary records of cures. They were evidently compiled at one time, and as we shall see, the source from which they were derived was partly the votive offerings with inscriptions that had been set up by the patients to testify their gratitude to the god, and partly the traditions of the temple; and the fact that one of the most curious cases is recorded by a Greek writer of nearly 200 years earlier in a slightly different form shows that this temple tradition did not deal only with recent cures. Such stories doubtless improved by repetition. Whether some of them had a basis of fact or not is a matter as to which I express no opinion. But, in a

general way, many of them seem to have similar essential features, and to agree with the description given by Aristophanes. In nearly all cases the patient comes to the shrine of Asclepios, sleeps in the "abaton," has a vision or a dream, in which some action is taken by snakes or dogs, or else something similar happens to him while he is awake; and as a result he goes forth whole in the morning. Naturally, cases that are not so cured are not recorded, except in instances where the god showed his divine power by punishing an unworthy worshipper—just as in the Plutus happened to the thief Neoclides.

I now proceed to cite a selection from the cases, without any attempt at classification, in the order in which they are recorded on the slabs.

1. Cleo was with child for five years, and in the fifth she came to the god as suppliant and slept in the abaton; and immediately on leaving it and going outside the precinct, she gave birth to a male child, who directly he was born washed himself with water from the sacred spring and went about with his mother. And Cleo, being thus favoured, inscribed on her dedication: "It is not the size of the picture (or relief) that is wonderful but the divine power, since Cleo was pregnant and bore the burden in her womb for five years, until she slept in the sanctuary and the god made her whole."

This is important as evidence, for Cleo's inscription probably existed, and the rest of the tale may well have been made up to explain it. Possibly Cleo and the child were represented in the picture or relief, and a later generation might not understand the custom in early art of representing young babies as much too mature in form.

2. A man with all his fingers but one paralysed came as a suppliant to the god, and seeing the pictures in the precinct he disbelieved the cures and jeered at the inscriptions. He slept in the abaton and saw a vision. He seemed to be playing knucklebones in the precinct, and the god appeared and seized on his hand and stretched out his fingers. And when he went out he fancied he clenched his hand and stretched out his fingers one by one. And when they were all straightened the god asked him if he still disbelieved. He said no, and the god advised him to distrust his scepticism in future. And when day came, he went out whole.

3. Ambrosia of Athens, with one eye, having come as a suppliant to the god, went round and ridiculed some of the cures, saying it was improbable or impossible that the lame and the blind could be cured merely by seeing a dream. She slept in the abaton, and saw a vision. She thought the god stood by her and said he would cure her, but as his fee she must dedicate in the precinct a silver pig as a reminder of her stupidity. And then he cut open her diseased eye and poured some drug into it; and when day came she went out whole.

Here again we have an indication of the source of the story. The pig was doubtless on show, and the true explanation may be quite different.

4. A dumb boy came as a suppliant for speech, and made the preliminary sacrifice; then the acolyte of the god said, looking at the boy's father "Do you promise within a year, if he gets his wish, to pay the fee?" And the boy suddenly said "I promise." His father was astonished, and bade him repeat it; he did, and was cured from that moment.

This is a case which is, I believe, easily paralleled from modern experience. The next two are evidently edited with a purpose. I summarise them briefly:—

5. Pandaros had certain spots on his forehead. The god appeared to him in a dream, and put a bandage on them, bidding him on leaving to dedicate the bandage. When day came he took off the bandage and dedicated it in the temple, and his spots were gone. Echedorus, who suffered from the same complaint, came with a sum of money from Pandaros to dedicate to the god. He saw a vision in a dream. He thought the god asked him about this money, and he denied it, but promised to dedicate a picture if he were cured. The god put Pandaros' bandage on his forehead, and bade him when he went out to wash his face from the sacred spring, and look in the water. He did so, and saw that Pandaros' spots were added to his own previous ones.

6. This case is of a boy suffering from stone. He thought the god stood by him and said: "What will you give me if I cure you?" and he said "Ten knucklebones." The god smiled and said he would cure him; and when it was day he went out whole.

7. A man came to the god as a suppliant so blind in one eye that only the empty socket was left; some pointed out his folly in thinking he could come to see when there was no eye there. He slept and saw a vision; he thought the god mixed a salve and opened his eyelids and poured it in; and when day came he went out seeing with both eyes.

Here a comparatively common case seems to have been improved by the priests to increase the wonder of the cure. The next is a quaint story, not medical at all, but apparently intended to show the general powers of the god.

8. A porter fell down more than a mile from the precinct, and found some vases in his satchel were broken, including a cup his master used to drink from. He was distressed and sat down trying to piece together the fragments. A stranger passing by said, "That is no use, not even Asclepios could make that cup whole." He went on to the precinct, and when he opened his satchel he found the cup whole. He told the tale to his master, who dedicated the cup to the god.

I fear I can offer no explanation of this story, which shows we must admit some items to be pure invention. But doubtless the dedicated cup was on view to convince sceptics. Another case shows a human touch which reminds us of an incident in the Acts of the Apostles.

9. Æschines, when the patients were sleeping in the abaton, climbed a tree to look into it. He fell, and struck his eyes on some stakes. He was blinded, but he became a suppliant to the god, slept in the abaton and was made whole.

The next case looks like a simple example of surgery, possibly improved in detail, especially as to the quickness of recovery.

10. Euhippus carried a spear-head in his jaw six years. While he slept in the abaton the god took out the spear-head and placed it in his hands. And when day came he went out whole with the spear-head in his hands.

11. A man of Torone suffering from leeches slept in the abaton and saw a vision. He thought the god cut open his chest with a knife, took out the leeches and placed them in his hand, and sewed up his chest again. And when day came he went forth with the creatures in his hand and was made whole. He had swallowed them in a potion given him craftily by his step-mother.

12. Hermodikos was paralysed. When he slept in the abaton the god cured him and bade him when he went out to carry the biggest stone he could into the precinct, and he brought the stone that now lies in front of the abaton.

Here again the visible stone may have suggested the story.

13. Nikanor, a lame man, was seated; and a boy while he was awake stole his staff and ran away. He jumped up and pursued the boy, and from that time he was cured.

14. A man had his toe healed by a snake. Suffering greatly in his toe from a malignant wound, he was brought in the daytime by his attendants and sat down on a bench. He fell asleep, and a snake coming out of the abaton cured his toe with its tongue, and then went back into the abaton. When he awoke and found himself well he said he had seen a vision. He thought a beautiful youth applied some medicine to his toe.

This last reminds us of the cure of Plutus in Aristophanes; it is also interesting from the curious correlation of the vision in a dream with what actually happened; a confusion of the two may explain other cases. A belief in the healing power of the snake is of course common enough.

15. Alcetas, being blind, saw in a dream the god approach him and open his eyes with his fingers, and he saw the trees in the precinct. And when it was day he went forth whole.

This curiously reminds one of the blind man in the Bible, who saw "Men as trees walking."

16. Heræus had no hair on his head and a bushy beard; ashamed of being a laughing-stock to others he slept in the abaton and the god anointed his head with a preparation that made his hair grow.

It is to be noted it is not stated in this case that the cure was instantaneous.

17. Thyson, a blind boy, was licked on the eyes while awake by one of the dogs in the precinct, and went forth whole.

Here there is no vision or dream, as in the case of the man cured by a snake. Dogs also are commonly reputed to have this healing power, possibly because they lick their own wounds. Sacred dogs and snakes were evidently kept in the precinct for the purpose.

I have given a practically complete version of this inscription because I think the form and details of the cures quoted are of importance in forming any just estimate of the value of the record. The other slab is not so well preserved, and the records of many of the cases are only fragmentary. I do not therefore propose to reproduce them in detail; in general character they are similar to those on the first slab. But two or three of the cases are of a special interest, and I add them in summary form.

18. The mother of a girl at Sparta consulted the god on behalf of her dropsical daughter. She dreamt that the god cut off her daughter's head and hung her body neck down; when much liquid ran out, he sewed the head on again. She returned to Sparta and found her daughter, who had had the same dream, restored to health.

This kind of vicarious incubation is unusual.

19. A somewhat similar case is that of Aristagora who had a worm in her intestines. She slept in the shrine of Asclepios at Troezen, and had a dream. She thought the sons of the god, who was himself away at Epidaurus, cut off her head, and being unable to replace it, sent for the god. Meanwhile day came, and the priest saw the head separate from the body. The following night she had again a dream that the god came and replaced her head, and then cut open her abdomen, removed the worm, and sewed her up again.

Here there is obvious confusion between dream and reality, and the priest, seeing head and body apart, seems to be a corroborative detail. But the chief interest in this case lies in the fact that the same story, with some variation, is told by a writer some two centuries earlier than the inscriptions, Hippys of Rhegium. According to his version, the lady came to the precinct of Asclepios at Epidaurus, not the one at Troezen; the temple attendants attempted the cure, cut off her head, removed a gigantic worm, and then could not put the head on again. The god came and blamed them for their presumption, and put things right. It is evident that the priests would not tolerate a record of such blundering in their own temple. One or two other cases have features of interest.

20. A man having what is described as a wound or sore in his belly was lashed down when he resisted operation. Asclepios cut open his abdomen, removed the sore, and sewed him up again. He was cured, and the floor in the abaton was covered with blood.

21. A man suffering from headaches dreamt that the god gave him some training for the pancration; he was cured, and soon after won the pancration at the Nemean games.

22. Finally, a lady suffering from indigestion dreamt that the god gave her some medicine in a cup to drink which made her sick, so as to fill her basin. And when day came there was her basin full of vomit, and she was cured.

In this last case the dream seems to correspond with the fact.

These inscriptions have been much discussed, and some think them a mere tissue of superstitions and absurdities. But so high an authority as the late Sir Clifford Allbutt says that—

"by pomp, splendour, and ancient enchantments the senses were captured, and the springs of nervous energy unsealed. . . . It is supposed that mesmerism was a potent means in the hands of the priesthood; that patients were subjected to hypnotic suggestion we know with some fulness."

I am not, of course, competent to criticise the evidence from a medical point of view, but I have studied both the records and the psychology of the ancient Greeks, and I think that, allowing for some improvement in editing on the part of the priests, above all of some confusion of dreams and facts, many of the cases above may be attributed either to medical or surgical skill, and that among them are also cases of faith-healing or of sudden impulse or suggestion due to nervous excitement. However this may be, the priests of Asclepios certainly changed their practices in later times, and seem to have taken to running sanatoria and no longer depending on instantaneous cures, for which faith no longer was forthcoming. A good example of this later treatment is offered by the case of M. Julius Apelles, in the second century A.D., who suffered from chronic dyspepsia, and was ordered by the god to take a kind of rest cure, with prescribed diet and regular exercise. Such prescriptions are not uncommon, and show that the various shrines of Asclepios had become centres of medical and even surgical therapeutics.

INCUBATION SHRINES.

Asclepios was not the only god or hero in whose shrines the custom of incubation was prevalent. In the precinct of Amphiaraus at Oropus it was customary for invalids who consulted what was practically a dream oracle to cast gold and silver coins into the sacred spring. They sacrificed a ram, and slept on its skin in the temple or a portico attached to it; they then related their dreams to the priests, who gave expert interpretations. We have unfortunately no information as to what these were like, but they may have given opportunity for medical advice. The shrine was a popular one, and therefore must have met with some success.

In another shrine, that of Trophonius at Lebadea, there were elaborate arrangements which seem to imply some mechanical devices and trickery. The traveller Pausanias, who himself went through the process, gives an elaborate description of it. After some days of preparation, with sacrifices, special diet, and cold baths, on the night chosen the patient was bathed in the river, led to the two springs of Forgetfulness and Memory, of which he had to drink, and then he descended by a ladder into an artificially constructed hole in the ground. Here he lay down with his feet up to the knees in a hole at the side. His whole body was immediately drawn through the hole by an irresistible force; the oracular response was either by sight or hearing, and he returned again through the hole feet first. The priests took him, placed him on the seat of Memory, and interrogated him as to what he had seen or heard, and then returned him to his friends, in a state of terror and unconscious of his surroundings. But he soon recovered and laughter returned to him. The priests, here also, gave expert interpretations of the sounds or visions. The oracle was mostly, though not exclusively, consulted by invalids, to whom it must have been a sore trial, though Pausanias declares none of them were ever killed by it, except a soldier who went in hope of loot, and whose body was found some distance away.

Shrines for incubation are by no means extinct in Greek lands at the present day. In conclusion, I should like to describe one of those which I have myself more than once visited. The great church and precinct of the Panagia (Our Lady of the Annunciation) in the island of Tenos is visited at her annual festival by crowds of people from all Greek lands, bringing with them many men and women suffering from all sorts of diseases, especially the blind, the lame, and the paralysed. These are laid, in their beds, on the floor of the church and of the crypt beneath it, which they fill, so that there is barely room to pass along between them. The sight must be very like the abaton in the precinct of Asclepios in old times. The patients are placed here on the eve of the Annunciation, and so spend the night. Every year some two or three so-called miraculous cures take place; one year when I was there a woman who had crawled painfully up to the church with paralysed limbs threw away her crutches and danced back to the harbour amid the rejoicings and congratulations of her friends. I do not think that fraud or collusion plays any considerable part in such cases. It is to be remembered that only two or three out of hundreds are so cured; and those who are not so forget their own state in rejoicing at the healing of another, just as the rest of the patients surrounded Plutus in the play. The many are forgotten, and the few are remembered and recorded. The case of Lourdes is, of course, similar, and I believe nobody now doubts the instances of faith-healing that have occurred there, especially in nervous or hysterical cases. A certain number of such cases, together with some examples of successful surgery or medical treatment, may well form the nucleus around which the sometimes fanciful records of the cures of Asclepios have accumulated.

An Address
ON
THE HUMAN TOUCH IN PROFESSIONAL LIFE.

Delivered to the Students of Guy's Hospital at the Opening of the Winter Session

BY MAJOR J. H. BEITH, C.B.E., M.C.
"IAN HAY."

GENTLEMEN,—First of all let me say how greatly honoured I am by your invitation to me to address you this afternoon. My pleasure, however, is somewhat diluted by the fact that I am not in any way qualified to address a medical audience—except to this extent, perhaps, that once, long ago at Cambridge, I took a course of chemistry and physics, as a sort of antidote to a prolonged dose of the classics; and also, because during those far-off undergraduate days my circle of acquaintance lay very largely among gentlemen who kept a human skull on the mantelpiece and a skeleton, or portions thereof, in the cupboard, and whose soaring spirits only drooped—and that for a moment—when their thoughts turned towards a mysterious and awful ordeal which lay waiting for them about the end of their third year, called the Second Part of the Second M.B. Moreover, it was in that noble company that I first made the acquaintance of my friend—your friend—our friend—Dr. H. C. Cameron, through whose offices, good or bad, I find myself here this afternoon.

We were a band of brothers in those days, with all things in common. Some of us were studying classics, some mathematics, some theology, some medicine, and some, of course, were merely hoping to be excused the General, or be allowed an ægrotat in botany; but just as you can distinguish the voice of the saxophone above all the other instruments in a jazz band, so medical interests and medical shop overtopped everything else. If one of our medical friends performed the feat of "passing his bones," we celebrated the event together, theological students and all. I became well versed in the airy chatter and gossip of what were called in those days, and I suppose are still called, the meat shops; and I shall never forget the scene of enthusiasm which occurred one evening, the first evening of term, when an excited second year man—one of those busy persons who are always full of what we will call, not inappropriately, inside stuff—burst into my room, where I was entertaining a few medical friends, seized Cameron by the hand, shook it warmly, and said to him: "Congratulations, old man! You've got a head and neck!" It is upon such slender foundations as these that I am endeavouring to build up sufficient courage to address you this afternoon.

PERSONALITY AND TRAINING.

I have labelled my discourse the Human Touch in Professional Life, by which I mean character, or personality, as compared with technical knowledge and ability. Of course, the one must not be regarded as a substitute for the other. No force of character, no attractiveness of personality in the world, can ever compensate for ignorance of one's job—in your profession of all professions. Personality is a useful, and sometimes invaluable, appendage to a man's professional equipment, but it can never constitute an equipment in itself.

I emphasise this rather patent fact because there is a general and dangerous tendency in the world to-day to exploit this personality stunt to an absurd degree, to the neglect and detriment of real training and thorough knowledge. In other words, we live in an age of advertisement—in an age, that is, where people are tending more and more to expend their energies, not upon putting quality into their goods, but upon thinking out ingenious and profitable methods of disposing of those goods. The theory appears to be that if you advertise them long enough and loud enough it does not matter whether your goods are good or not. So the art of advertising has now been elevated to one of the high and solemn mysteries. There are actually colleges and institutions in the world to-day at which you can receive instruction, and win diplomas, in this art—the art of ascribing to an article virtues which it does not possess so persistently and so convincingly that ultimately you succeed in unloading it upon someone who does not want it. I speak with some feeling in the matter, because I myself am the possessor of, I think, 28 volumes, in half-morocco, of an obsolete encyclopædia which I was recently dragooned into buying, on the instalment system, by those exact methods.

From this you will realise that the whole aim of modern advertising, whether you are selling encyclopædias or merely trying to get elected to Parliament, is to delude your hearers into confusing promise with performance; and the odd part about it is that the advertiser often ends by deluding himself. For instance, upon the premises of our most progressive railway companies you may possibly have observed pictorial posters depicting an express train, in three colours, dashing along a highly burnished permanent way at 70 miles an hour, supported by alliterative captions on the subject of Sunny Southern Sunshine Specials, or something of that kind. The railway companies in question obviously regard that poster as a perfectly adequate substitute for an efficient train service; and what is more, they can hypnotise some of their passengers into agreeing with them. We succumb to political wiles in the same fashion. One politician gets up and promises us that he will take a shilling off the income-tax. A second gets up and promises to make it two shillings; and so fascinated are we by the glamour of advertisement that we promptly vote for the second candidate, although we know perfectly well that neither of them has the slightest intention of taking anything off the income-tax at all.

So you see, if you want to get on in this world quickly you must advertise. And if you want to advertise successfully, the best way is to get into personal contact with your victim; and, of course, in personal contact it is your bearing and your manner which will count. Therefore, to be a successful man of business nowadays you must have personal magnetism or charm; and if you have not got charm you must acquire it—in other words, you must apply to persons who can sell it to you. And there are such persons. The other day I came across a most invaluable book, obviously of American origin, in which was set forth the whole art of making yourself attractive, and even lovable, to people to whom you want to sell something. In anticipation of my next interview with my publisher, somewhat overdue, I studied this little volume very carefully.

Personal Questions.

It started with a sort of examination paper, in which you were asked 40 questions about yourself, which you had to answer honestly and to the best of your ability, and then allot yourself marks for each. Here are a few. I pass them on to you, because I feel that it is not fair to keep such pearls to myself:—

1. Do you wear colours that are best suited to your type? If so, credit yourself with five marks.
2. Do you start to work every morning with clean fingernails, clean boots, shaved, trousers pressed, suit and linen spotless? If so, credit yourself with five marks.
3. Can you walk across a room full of guests, speak to the hostess, and conduct yourself without awkwardness or embarrassment? If so, credit yourself with five marks.
4. Do you gesture from your shoulders instead of from your elbows? (See p. 135.)

Being entirely baffled by this question, I turned to p. 135, and discovered that to make gestures with your elbows is wrong, because if you do, "you do not include all the persons in a room." I had never known that. Anyhow, not knowing which part of my anatomy I do gesture with, I gave myself no marks and passed on.

5. Do you avoid using cheap, boastful expressions? Are you making some effort to improve your vocabulary? Do you own a good dictionary? If so, credit yourself with five marks.

I did not quite grasp the connexion between these questions, but I gave myself three marks. After all, I do own a dictionary.

6. Do you give a certain amount of thought in advance to your conversation with people you know you are to meet, so that you will be sure to talk of things that are of interest to them? (See Chapter 7.)

I looked up Chapter 7. It said:—

Here are some general questions with which to open a business conversation. Others, equally interesting, will occur to you.

(*a*) How far back can you remember?
(*b*) Do you fear death?
(*c*) How is your wireless working?
(*d*) How far do you consider you are indebted to your parents for all they have done for you?
(*e*) Do you think doctors should charge their patients in proportion to their incomes, or should they have a standard fee for their services?

I did not think that any of these topics would really interest my publisher, so I abandoned that chapter, and passed on to the seventh question.

7. Do you avoid making a public display of your affection for your wife or sweetheart?

I unhesitatingly credited myself with five more marks, and closed the book. There were 33 more questions, all as good as that, but I need not trouble you with further extracts. However, I think I have made it sufficiently clear to you what a complicated job it is in these days to fit yourself to be a really successful and lovable salesman.

THE ART OF HANDLING PATIENTS.

Still, at the back of all this rather fantastic stuff there is a real strain of common sense. Of course, it is of importance—enormous importance—to be able, on the top of all your intrinsic and technical merits, to suit yourself to your company and employ your natural gifts to their best advantage. And in the cultivation of the healing art—your art—I think you will admit that the human touch is of incalculable importance. I suppose it is true to say that as much healing is produced by suggestion as by physic, and that many a patient gets well simply because he believes in his doctor. We need not go all the way with Samuel Butler, who tells a story somewhere of a man who swallowed a doctor's prescription in the belief that it was actual medicine, and was immediately cured of a dangerous illness, but the human touch does count, all the time. A doctor is above all things a propagandist. To a certain extent he is always playing a part—backing up the resources of science by the arts of the skilled advocate; mixing the powder and the jam in such proportion that the powder escapes notice yet achieves its purpose; doing everything, in fact, that is morally justifiable to create, maintain, and increase the confidence of the patient in his own chances of speedy recovery.

This brings us to the real heart of our subject—the consideration of the gentle art of handling patients. I can say something about this, because, although I have never been a doctor, I have occasionally been a patient; and I agree with you, right away, that patients are a most unreasonable tribe of people. You can divide them into many classes, but three will suffice here:—

1. People who are really ill. We need say no more about these, because they give little or no trouble.

2. Patients who are rather ill, but do not believe in doctors, and tell you so quite frankly. You know the man who says to his doctor:—

"I only called you in because my wife insisted on it. I know as well as you do that the whole medical business is mere mumbo-jumbo, mere quackery; so don't start taking my blood pressure or doing any conjuring tricks with thermometers and stop-watches. I know how my inside works much better than you do, because it's my inside and not yours. You can leave me some medicine if you like, just to save your face; but I warn you I shall throw it out of the window."

That's the bluff, honest, hearty type of patient, the type that has made the name of Englishmen respected all over the world.

Well, the simplest and most profitable way to handle this individual is to employ the soft answer. You say:—

"My dear fellow, I agree with every word you utter. Of course, you are quite right; all medicine is nine parts faith and one part colouring matter. You and I both know that, so there is not the slightest use in my prescribing for you in the ordinary way. If I may say so, it is a treat to encounter a patient with whom a doctor can be absolutely frank—a patient who doesn't want things wrapped up in meaningless phrases. You, as of course you probably know without my telling you, are suffering from ——."

Here you give him the name of his disease in Latin—two longish words, with a false concord thrown in. You add a few scientific terms about reflexes and secretions, and so on, and wind up, if possible, with an incorrect chemical formula. After that, he will simply eat out of your hand. Technical terms are the medicine he wants. Many a man will positively enjoy a tennis elbow if he is allowed, when he talks about it at the club, to refer to it as "my synovitis."

Then we come to a third class of patient—the patient who thinks he is going to die forthwith, if not sooner, and has to be cheered up. In that connexion I cannot resist calling, or recalling, to your notice one of W. W. Jacobs's stories about that immortal trio Sam, Peter Russet, and Ginger Dick. I want to read you an extract. Sam, you may remember, was taken ill.

"And," continues the Night Watchman, who tells the story, "like most 'ealthy men who get a little something the matter with 'em, 'e made sure 'e was dying. 'E sent Peter out for a doctor, and in about 'arf an hour Peter came back with a sandy-'aired young man with red eyelids and a black bag. 'Am I dying, sir?' ses Sam, after the doctor had listened to his lungs and 'is 'art, and prodded 'im all over. 'We're all dying,' ses the doctor, 'only some of us 'll go sooner than others.' Peter and Ginger Dick took turns to be with Sam that morning, but in the arternoon the landlady's mother, an old lady who was almost as fat as Sam 'imself, came up to look arter 'im a bit. She sat on a chair by the side of 'is bed and tried to amuse 'im by telling 'im of all the death-beds she'd been at, and partikler of one man, the living image of Sam, who passed away in his sleep. It was past 10 o'clock when Peter and Ginger came 'ome, but they found poor Sam still awake and sitting up in bed propping 'is eyes open with 'is finger."

Well, that's a good example of how not to do it. What a patient of that kind wants is to be reassured; and that is where technical knowledge will not avail you so much as a cheerful presence and a confident manner. And here, speaking from my experience as a patient, may I drop a hint to future G.P.'s? Humanity fears one thing above all others—the unknown. What frightens a patient most of all is to have nothing definitely wrong with him. Once a definite cause has been assigned to his ailment, once you have hung a label on it marked in plain figures, and given him something physical to hold on to, he will endure almost anything. So if you can, be explicit with him upon this point, even though you may not have the slightest idea what is the matter with him. Tell him something—anything that will keep his imagination from soaring into the regions of unhealthy speculation. Anything will do: a man is never frightened of a thing he knows all about, or thinks he does. It is a good plan sometimes to be symbolic—to illustrate the patient's condition, or supposed condition, by some mechanical analogy. You can refer to trouble in his engine-room, or explain that his dynamo requires tuning up, or his accumulators recharging, or that an overstrained spring must be relaxed. Something tangible and concrete like that—something he can bite on. Tell him that he has a Rolls-Royce body, but that there is water in the carburettor, or the petrol pressure is faulty. That will cheer him up much more than to tell him baldly that his malady is functional and not organic. It is a strange thing, the amount of solid comfort a nervous

person can derive from having his interior compared to that of a motor-car; but the comfort is there—especially if you tell him he's a Rolls-Royce.

THE SENSE OF RESPONSIBILITY.

Now, gentlemen, you must not think, because I am referring lightly at times to your responsibilities, that I do not realise very thoroughly how great and solemn those responsibilities will be. Yours, I suppose, is, with the possible exception of the teaching profession, the most responsible profession in the world. And for that reason you may be proud and thankful that you spring from the race you do, because our race possesses in a peculiar degree a quality which is indispensable to men of your calling—initiative; ability to act without running to someone else for instructions; readiness to assume responsibility as a mere matter of course. An Englishman possesses an extraordinary capacity for reliable work in a subordinate position, or perhaps I should say capacity to perform a task efficiently and conscientiously without any sort of supervision from higher up. Who are the men who keep the wheels of our Empire running? You may safely say they are not the people at the top. As a nation, we have seldom been well led or wisely directed in all our history. The main strength of our country lies, and always has lain, in our men-at-arms—our Other Ranks, as they call them in the army—whether those ranks be military or industrial, or administrative, or professional. Most of our successes, whether in war or peace, have been what we are proud to call soldiers' battles—the victories of the average man—the average Englishman. He is not brilliant, he is not spectacular, but you can rely on him. In South America they have a phrase, *Palabra Inglesa*—"on the word of an Englishman," and it means, with them, "Honour Bright!" That is the most splendid compliment ever paid by one nation to another, and it is addressed in the main to the man whom we are considering now. We ourselves depend on him to such an extent that we pay him the compliment of taking him as a matter of course—and we are seldom disappointed. The Civil servant, the platoon commander, the head clerk, the junior form master, the slum curate, the country doctor—these are they that propel the ship of State. Up above upon the quarter-deck, looking portentously wise and occasionally quarrelling for the possession of the helm, you may behold their superiors; but these friends of ours remain below the water-line—unheeded, uncredited, and to a large extent unsupervised, and that is the main point—and see to it that the wheels go round. They grumble and grouse, of course, and tell one another they are fed up—and usually they are—but they carry on, because initiative and responsibility are in their blood. They expect no thanks, and they are not disappointed. But the ship goes forward, and that is all they care about. Win or lose, sink or swim, in good times or in bad, that is what counts—the ship, the cause, the job, and not themselves.

Our Empire, like most of our institutions, came into existence in the most casual fashion. It was never acquired officially; it was never built up upon the ambitions or intrigues of kings and ministers. It was founded upon the efforts and sacrifices of common men—men whose very names have perished—who went out from our little island because the spirit of adventure bade them go out and better themselves, and who planted the seeds of enterprise and justice all over the world, to the complete effacement of themselves, and too often at the sacrifice of their own lives—men, in other words, who set the cause above the prize. It was only when through their efforts our interests in this quarter of the globe, or that, grew too unwieldy or important for private control that the British Government, with a deep sigh and an anxious eye on the taxpayer at home, reached out a reluctant hand and took official command.

To-day, all over the world wherever our flag flies, men you never heard of, and never will hear of, are shouldering responsibilities, making rapid decisions, improvising working expedients, getting the wheels round somehow—not for any special honour or glory that is going to accrue to them, but because it is their job, and it is up to them and them alone to do it. So they do it, by sheer force of character, personality, and the human touch. These are the things which bring them through. And foremost among those men I salute the members of your profession, because that profession bears as heavy and as proud a share of those burdens and those responsibilities as any.

THE FUTURE OF THE MEDICAL STUDENT.

Now I think I have said all I intended to say—or something like it—and it only remains for me to wish you good luck in the career that you have chosen. Many branches of that career are open to you, and no one of you knows exactly what the future holds in store for him. It may ultimately land you in Harley-street or at the head of some great hospital. It may make you a student of research, devoting your life to the study of a single disease or the isolation of a single germ. It may send you overseas as a medical soldier or a sailor, or as a member of some scientific expedition to a far tropical country. Or it may simply plant you down as a general practitioner in a manufacturing town, working 18 hours out of 24, with a large, troublesome, and for the most part unremunerative family of patients running to you all day long to have their hurts healed or their fears allayed. But wherever fate may place you, however high or low; however hard you may have to work; whatever difficulties and discouragements you may encounter—and you may be sure they will come—nothing can take away from you the sheer greatness of your chosen profession. Yours is one of the few essential trades on earth; it goes right down to the roots of human existence. You are the standing army and navy of humanity. Your life is one long campaign on behalf of other people, against ignorance, and dirt, and cruelty, and disease. We can never do without you. You bring us into the world; you attend us upon our voyage through life; at any moment we may call upon you to dry-dock us, or more frequently assist us to carry out that most ticklish of undertakings, the execution of repairs while under steam. And when the time comes for us to pass beyond the horizon of human life, we call upon you again, for the last time, to assuage our sufferings and soften the pangs of death.

You see, we depend upon you in all things; and we trust you implicitly. To your hands we commit the innocence of our children and the honour of our womanhood; and it is the special glory of your profession that these commitments are made without question, as the merest matter of course, because we know that they will never be abused. For generations that tradition has been passed down, and it is to that tradition and heritage that you are now about to succeed. Here in Guy's Hospital you have a great history and a wonderful record. You were at work 200 years ago, and to-day your activities are greater than ever. Only a few years ago Guy's men were doing their duty on every fighting front in the war, and Guy's nurses too. I well remember at the Battle of Loos, almost ten years ago to-day, a specially constructed communication trench for stretcher-cases only, which was called "Guy's Avenue." And you have a proud reputation here for team-work and esprit de corps, whether in your work or in your play, as those who have encountered the Guy's Foot-ball Fifteen have cause to remember. Altogether, a great tradition and a great heritage. So I say, go on and prosper!

And one last reminder on the matter of my text. You will note that I have heroically refrained throughout this rambling discourse from urging you to cultivate what is known as an "agreeable bedside manner." I still refrain, but let me remind you once more that a few words of cheery common sense and unprofessional informality will often do more for the average patient than the whole British Pharmacopœia. So, steep yourselves as deeply as you like in the knowledge and lore of your craft, but do not forget the Human Touch!

An Address
ON
THE STUDENT-HABIT.

Delivered at the Opening of the Winter Session at King's College Hospital

BY SIR ARTHUR KEITH, M.D. ABERD.,
HUNTERIAN PROFESSOR, ROYAL COLL. OF SURGEONS OF ENGLAND.

OF all the men it has been my fortune to meet in the flesh, Clifford Allbutt, Regius Professor of Medicine in the University of Cambridge, came nearest to my ideal of the real student and the perfect gentleman. He died in February of the present year, having reached his eighty-ninth year. For 70 of those years he was a professed student, and yet at the end of his term he carried his load of learning with ease and comfort as if it were a garment which had become part of him. He never suffered, so far as one can learn, from that fell disease which so often wrecks the lives of budding students, mental dyspepsia. For his brain managed its affairs as a good woman runs her household; every article admitted to his mind had first to be sampled; when admitted the right place was found for it; every article admitted had to add to the efficiency and comfort of his mental household; every room had to be furnished and used. And yet at the end of a lifetime of toil—a toil which had been his constant pleasure—he still continued to make additions and alterations to his mental furniture. His mental household, like that of a thoughtful, happy, generous housewife, prospered in that which it gave away. The giving away kept the rooms of his mind sweet and living.

I have cited the example of Clifford Allbutt in order that I may make clear to you what I mean by the "student-habit." He could sit down by the hour and apply himself with a sense of pleasure to gleaning knowledge from the written or printed page, drinking in and assimilating facts observed or explanations given by men who had toiled in years long gone by. He applied himself with equal ease to the writings of his contemporaries, men who were still toiling in their laboratories or in their wards. The men or women who can acquit themselves thus have acquired the student-habit. Of all the struggles men undertake, that which ends in making the brain the willing slave of study is the most arduous. Of all mental habits it is the one most difficult to come by, and the one which is most easily lost.

Many men who are masters of research, who force secrets from Nature by experiment, who prefer to glean their knowledge at first hand and are, I admit, the rarest and highest form of scholars, often despise the habit I wish to extol—the student-habit. There have been, and there are, successful medical men who turn aside from books, who leave their medical papers unopened in their wrappers, who prefer to be guided in thought and action by what their fingers have felt and their eyes seen. If by neglecting the student-habit they gain something, they also lose much, and it would go ill with their harvest of knowledge if their successors treated them in the same selfish way as they have done their predecessors. I do not claim for my ideal student, Clifford Allbutt, that he was a pioneer who opened up great new fields of knowledge, but he attains to my ideal because he checked what he saw and what he suspected against the observations and the theories of the great minds which have paved the highways of medicine. Nature had endowed him richly, but he could never have done what he did nor been what he was unless he had acquired the student-habit. I speak as an old student of ordinary ability, to young students born into the same happy estate, and I say that the acquisition of the student-habit is one of the most valuable assets that a man or woman can carry into any line of life.

At what age Clifford Allbutt acquired the student-habit I do not know, but I can assure you that if it came to him by the age of 20 it had come in due time, for with the best of students the twentieth year is in sight before the real purposes of life dawn on their minds. Nor do I know of the struggles which he went through before the habit of study became his second nature—such biographical details are usually overlooked—but I am certain that, even in his case, there had been a struggle, for of all human habits that of the student is the most unnatural and the most forced; it is a hot-house plant which can thrive only when enclosed in the glass houses of the highest civilisations.

OUR ILLITERATE FORBEARS.

The student-habit is comparatively new amongst the peoples of North-Western Europe. A thousand years ago our British forbears, although rich in the knowledge of life, were in the full meaning of the term illiterate; for many thousands of years their forefathers had been hunters, fishers, crofters, and livers in the open air, drinking in traditional knowledge by word of mouth. The peoples of Western Europe produce the highest form of students the world now has, and yet the student-habit is for them a recent importation. It was otherwise in the East; 6000 years ago, perhaps 8000 years ago, young men in Babylonia and Egypt were acquiring the student-habit; it began as soon as the human mind conceived that knowledge could be inscribed on stone or brick; with that discovery was instituted the student-habit. If there is aught of truth in the inheritance of acquired faculties it is from the peoples of the East we should get our finest scholars; they come of long lines of descent in which study has been endemic for countless generations. It is true that amongst the peoples of the East, from Egypt to China, we do often find those who have a marvellous facility to memorise the written or printed page and yet amongst them the Clifford Allbutt type of scholar is rare—almost unknown—the scholar who assimilates what he reads and makes his learning a part of his manhood. Learning thrives in Western Europe just because it has fallen on a strong and virgin soil, one which has not been wasted by the exhausting crops of a long-continued literate civilisation. We have still in us the virility and the energy which are inherent in men and women bred for life in the open air.

It is because you and I have the aptitudes and instincts of our primitive forefathers so strong within us that we find it needs an effort—an internal struggle—to settle ourselves to our books of an evening. Our difficulties are even greater when the sun shines and a longing for the open country stirs our blood; it is then that we have to struggle with the original Adam which is present to a greater or lesser degree in the hearts of all of us. English teachers, beyond those of any other country, have recognised the needs of those primitive faculties which well up in the breasts of scholars young and old; we encourage play and sports of all kinds in our schools and universities in order that the inheritance which has come down to us from savage ancestors may find vent in exercise. Golf is one means of allaying the beast; walking another. It is so difficult for the modern student to weld the needs of our present-day life to his inborn predilections. There are cards, billiards, and theatres ever ready to tempt the unwary student from his stool. For if study is to prosper, is to become a second nature, we have to make sacrifices; dances, festivities, and pleasant company have to be kept within the bounds of moderation. To dance, to sing or play, to feast, to gossip are the outlets of the natural man; ever since our distant ancestors emerged from the jungle these instinctive outlets for enjoyment have been clung to and cultivated; they have come down to us in an undiminished vigour. Before the student-habit can be acquired they have to be—not vanquished or eliminated—but disciplined. That is why it is so difficult to become a real student.

REACTION OF BRAIN AND STOMACH.

You will not be a student for many years before the most natural of all human appetites begins to give

you concern. Amongst the prerogatives of life we count the enjoyment of food; we expect to eat with relish and to enjoy the results of repletion. We are not quite certain what our brain cells live on, but we do know that they need very little to do the heaviest work we throw on them; the energy in an ounce of sugar would be enough, I suspect, to produce any of Shakespeare's plays, if it found its way to a brain gifted as his was. Everyone of us has been given the appetite, not of the brain-worker, but of the muscle-user. The professional student, in his earlier years, expects to satisfy his appetite just as fully as if he were using his muscles all day in the open air, and sooner or later his stomach has to pay the price of his acquired habit of study. Carlyle, Darwin, Huxley, and Herbert Spencer suffered from this "student's disease"; it is true all were moderate eaters and yet their stomachs were in a state of continual upset and rebellion, yet they all lived to a ripe age. Modern physiology has given the stomach a secondary place in the hierarchy of bodily organs. And yet somehow, as students know to their cost, sooner or later, brain and stomach react furiously upon each other. It is true that we do come across eminent students who have the physique, complexion, and appetite of yeomen. They are exceptions and should count themselves fortunate. Most of us who take to habitual study have to pay the price and the more we give our stomachs to do the higher is the price we have to pay. To become a real student you have to be prepared to make sacrifices. For your encouragement I would say this, that I know of no student who would exchange a regulated brain for the healthy appetite of the mental sluggard.

Many of us, perhaps most of us, have grown up under the belief that it is a natural thing for young men and women to give themselves to study. It is only when we approach the problem of the acquisition of the student-habit from the long-range historical point of view that we see how foreign the habit is to our nature and how recently the need for it has arisen. Some can claim that their family has produced scholars, learned men and women, for many generations; such are the exception rather than the rule. The majority of eminent scholars have no scholarly lineage. They come from highland glens, Welsh hillsides, English county villages, the first of their kind, so far as they can tell, who ever devoted their lives to the cause of learning. There must be throughout the length and breadth of our land immense and virgin fields of untapped scholarly talent. I am not speaking now of those rarely gifted minds which can imagine things which are new and true, which know the way to make Nature yield up her deepest secrets or discover how to harness new forms of energy for man's benefit, but of the rank and file which make up the learned army of a country. To join that army every recruit must learn the student step—the habit of study. It may at first sight seem surprising that there should be such an abundance of potential students in a population of manual labourers. But when one looks into the quality, which is needed above all others to make a man a master-student, it is no longer surprising, for we see that the essential qualification is a power of steady application in any line of endeavour whatsoever. The potential student must have method and foresight as well.

BRAINS ANCIENT AND MODERN.

When the modern student compares his outfit of brain with that which was given to his ancestor in remote times he meets with another surprise. The men who lived in Europe 20,000 years ago were just as well equipped as he is as far as concerns size and form of brain. What did those ancient hunters do with so big a brain? They had no professional examinations to pass, no briefs to master, no leaders to write, no mathematical problems to solve, no ancient classic to translate, no sermons to prepare and preach. If brains were given to us merely for such purposes then those ancient hunters had somehow come by a superfluity. Brains, however, serve the needs of much more than the intellectual side of our lives; beneath the intellectual centres lie a myriad of others which subserve more menial duties—by the exercise of which we fill the cup of life's enjoyment. But even this explanation is but partial; the full explanation lies much deeper and has to be sought in a strange law which regulates the construction of all living structures. All such structures have been framed on the rule which provides a large margin or factor of safety. All our organs—our hearts, our lungs, our stomachs, and our brains—have been built to meet not the daily routine of life, but emergencies which occur only at critical junctures. The heart on an occasion can rise to ten times its usual output; the lungs, if pressed, can nearly do as well. As for the stomach, the less said the better; modern civilisation tends to throw an unfair burden on it. But as for the brain, the factor of safety law holds good; we have, and our ancestors had, about ten times more than ordinary occasions require; our superfluity was given us for emergency. It is just this emergency ration that the modern scholar has to depend on, and there are few, if any of us, who use this extra allowance to its full capacity. You may study to the utmost limit of your endurance, and by the mere act of study you may rest assured that you will do your brain no injury. Infinitely greater harm is done by misuse and disuse of the brain than by overuse.

Let me make certain that you realise that the brains I am speaking of are not those of children; to push education upon an immature brain is cruelty; I am speaking of the mature brain, the state reached by most of us about the nineteenth year; it is then that the brain cells have come to their complete outfit and connexions. By habitual study you may overtax your physical endurance; you may damage your bodies if you neglect to exercise them, but you certainly will not damage your brain. You will never succeed in using your brain up to its full capacity. At the age of 74 James Watt acquired a knowledge of German, and at 64 Goethe, the German, mastered several Oriental languages. For my own part I use sleep as my barometer; when I begin to find that sleep comes to me with sluggard steps or if there is a tendency for my mind to "race" when I lie down I slack off. There is no greater nonsense talked than that brain-work may bring on "brain-fever."

HOW TO ATTAIN THE STUDENT-HABIT.

I have been speaking to you about the student-habit—seeking to explain why it is so difficult to acquire, but I have said nothing about how it is to be attained. There is nothing to be said; no one can teach it you; there is no royal and no easy road. Each one has to come by it for himself or herself by self-effort and by self-application. Nor have I said anything about a matter which every student soon discovers. Our brains have moods and tempers; like horses or the engines of motor-cars, they have to "warm up" before they will run smoothly and easily. The start is always the most difficult phase to manage. And often we are uncertain, when our brains start sluggishly, whether pressure will warm them up to study pitch or whether it is wiser to lay science or stiff reading aside and take to fiction. The healing power of a debauch of fiction is often marvellous in its results. The best brains are not like cart-horses which will do a turn at any hour; like race-horses they have their times off and times on. Therein each student is a law unto himself.

If I have been speaking to you who have still examinations to face I have also in mind those happier men and women who have left such ordeals behind them. Sooner or later they will discover that the student-habit, which is gained only by great and continuous effort, is soon and easily lost if not exercised. And they will also discover, as I found to my cost, that it is terribly difficult to get it back again. The medical man or woman who has lost the student-habit has become but a camp-follower in the great professional army to which we should all belong and in the activities of which we should all take a part if medicine is to prosper.

NOTES ON THE SURGICAL TREATMENT OF BRACHIAL BIRTH PALSY.

BY JOHN GILMOUR, M.S. DURH., F.R.C.S. ENG.,
HON. ASSISTANT SURGEON, ROYAL VICTORIA INFIRMARY, NEWCASTLE-ON-TYNE.

THE treatment of brachial birth paralysis, especially of the Erb-Duchenne variety, first attracted my attention at the Children's Hospital two years ago. Since then I have had the opportunity of treating several cases and of examining a number of others at the Royal Victoria Infirmary.

After having seen 25 cases of the palsy, one may safely say that the general impression that they mostly recover well, in time, is very misleading. It is said that one only sees the worst cases in hospital, and that there are numbers which do well at home. Up to the present I have not come across any evidence of this. On the contrary, an honorary colleague at the Children's Hospital, who has records of 40 cases, informs me that very incomplete recovery is the rule. Doctors are much more in the habit than formerly of referring their cases to hospital in the early months of the child's life. It is not surprising, therefore, to find that over two-thirds of the number under review did attend for examination and treatment before the end of the third month, most of them in the second month, when the ultimate result was still in doubt or before full recovery might reasonably be expected. Of the 17 who reported early only two can be described as having made a spontaneous recovery, while the others have not shown up much better than the last third who only attended at later dates after domiciliary measures had failed.

Whether it is admitted or not that one is justified in drawing conclusions from these facts, it is evident that there are numbers of children attending hospital with one or both arms crippled from birth for the treatment of which the unaided efforts of the masseur are inadequate.

Varieties.

Of those examined there were 23 of the Erb-Duchenne variety, two of the general arm variety, but none showing a pure Klumpke paralysis. On the obstetrical side all but three of the births were described as long or difficult. In one case the period of labour was short (five to six hours), and in two delivery was natural and unassisted. In the rest chloroform was used to facilitate instrumental or manual delivery. Three infants were said to have been asphyxiated and to have required prolonged resuscitation. The presentation was "vertex" in 16 cases, "breech" in four cases, and irregular in type in five cases. This analysis agrees roughly with that which Stransky made of 94 cases collected from the literature up to 1902. He blames direct pressure or traction upon the plexus in cases of difficult or prolonged labour in which anæsthesia was used, and in which a final rapid delivery was required for asphyxiated infants. Bailey states that overstretching will occur when the head and shoulder are separated more than 120°; and Peter and Bullard add that the stretching is increased by the rotation of the aftercoming part.

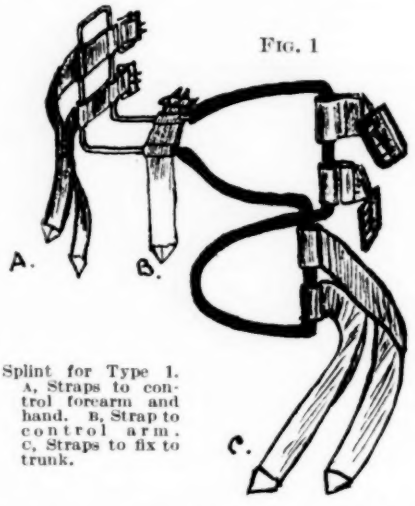
Ætiology.

It is not possible here to discuss the ætiology of the condition at any length, but it is worth reporting that in each of the four plexuses which were exposed by operation a definite lesion was found. Of late years a considerable literature has grown up on this subject since T. Turner Thomas propounded the theory that the palsy is only a pseudo-paralysis dependent upon injury of the shoulder-joint produced at birth. Lange supports this view, and Binnie is inclined to credit it; but the weight of evidence of an experimental, operative, and post-mortem nature is all against it, and in favour of overstretching of the plexus as the primary lesion.

Experimental Lesions of the Brachial Plexus.

Fieux, Shoemaker, Prout, Sever, and Adson were all able to produce lesions of the plexus, when exposed in the cadaver, by traction. In the Erb type of paralysis they found that the nerves rupture from above downwards. The importance of the supra-scapular nerve which frequently tears first because of its close peripheral attachment was indicated, and the need for its repair stressed because of its control of the external rotator muscles of the arm. Adson states that there is first a laceration of the deep cervical fascia, then of the unsupported epineurium and its vessels, and finally a separation of the nerve-fibres which occurs in the first instance between the ganglion of the fifth cervical root and the upper trunk, and if more force is used results in a partial avulsion of the ganglion itself along with the spinal root. Further strain causes avulsion of the sixth, then seventh cervical roots, and finally laceration of the fascia over the eighth root. He concludes by saying that "Inasmuch as injuries of the plexus are produced in the roots or ganglia, they seem primarily to be lesions of the nerve rather than secondary to lesions of the shoulder-joint. Minor injuries may be expected to recover partly or wholly; severer injuries rarely recover even with surgical treatment."

FIG. 1



Splint for Type 1. A, Straps to control forearm and hand. B, Strap to control arm. C, Straps to fix to trunk.

A. S. Taylor corroborates the impracticability of operating on the intraspinal lesions, although he is a strong advocate of early exploration in the less severe varieties. It is obvious that many degrees of injury occur, and that clinical varieties may be looked for which correspond to the gravity of the lesion. The cases under review illustrate this very well. In age they range from 7 weeks to 15½ years. Several distinct types can be distinguished.

Types of Brachial Birth Palsy.

Type 1. The Typical Case.—This is usually seen soon after birth with the characteristic "vertical arm" in which there is paralysis of the deltoid supra- and infra-spinati, teres minor, biceps, brachialis, and supinators. The arm is held in a position of internal rotation, the elbow is fully extended and cannot be flexed, and the wrist is often palmar and ulnar flexed. The arm cannot be abducted actively from the shoulder. Of this variety only three cases were seen, and in two early recovery is taking place. One of these came for treatment when nearly 2 months old, and the history is interesting.

CASE 1.—She is a second child, was born by the breech before the doctor came, and had the typical deformity in the right arm. When examined there were distinct signs of movement and a tendency to take up the position characteristic of Type 3 (to be described later). This could be overcome by manipulation easily, but the importance of

preventing contractures was realised, and the mother was instructed to move the arm in such a way as to produce: (1) External rotation of the humerus (with elbow at 90°). (2) Forceful abduction of the arm and backward extension of the elbow to push the humeral head forward. (3) Full supination of the forearm and free movement at all the joints. To keep the paralysed muscles at rest a platform splint of thin metal made after A. S. Taylor's pattern (see Fig. 1) was applied, and it was only removed for massage and movements for ten minutes twice a day. Marked improvement in power and in movement had occurred in one month, and during the second the splint was left off for increasing intervals during the day to allow the arm to be exercised. It is worn at nights now until recovery is considered complete. This baby tolerates the splint without a murmur.

If a splint is objected to, the position which it secures of abduction and external rotation of the arm, flexion of the elbow, and supination, can be obtained by fixing the wrist over the top of the head by a strip of gauze passed under the opposite axilla.

The principles involved in this line of treatment are three cardinal ones: (1) Relaxation of paralysed muscles (splint); (2) maintenance of nutrition in these muscles (massage); (3) prevention of contractures (movement). Neglect of the first and third is a sure way to court the onset of complications which transfer the case to Type 3.

Type 2. The Irritable Type.—This is similar to the first type, but is complicated by an irritable "neuritis" of the plexus, and considerable fretfulness on the part of the infant who, as a result, tends to fix the arm closely to the side and to resist treatment. The prognosis is correspondingly less favourable, and unless adequate measures are adopted it will pass into Type 3. In this series eight of the children were described as irritable, particularly whenever the arm was touched. Six of these passed into the third group, two were subjected to operation on the plexus, and one was seen for the first time a few days ago.

FIG. 2.

Posture of Type 3.

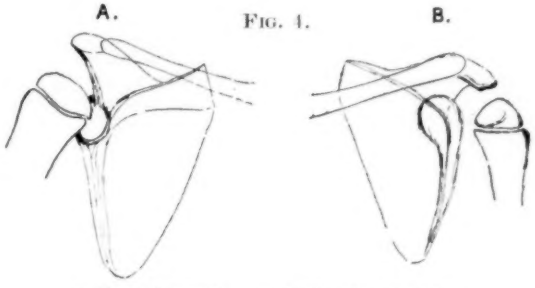
FIG. 3.

Showing total elevation of right arm.

Early fixation on the splint is therefore most important to relax the irritated muscles and prevent contractures, and to allow the inflammatory reaction in the neck to subside. Gentle massage keeps the weak muscles in tone meanwhile. After two months' rest gradual movement is practised and increased as toleration is established, and then the case is treated as in Type 1.

Type 3. Cases showing Contractures and the Progressive Deformities associated therewith.—These occur where treatment has been inadequate or neglected, and naturally develop only in those in which the lesion is neither too slight nor too great, since in the former recovery is likely to follow, and in the latter none will occur. Fairbank, in a study of 40 cases, found that 60 per cent. showed a definite tendency to muscle recovery, but also that 75 per cent. of them tended to develop contractures. This proportion is not an exaggeration, and it is a strong indication of the importance of proper early management of every case of Erb's paralysis. Seventeen of the cases I have examined have become thus complicated—a proportion of 68 per cent. The characteristic attitude of Type 1 is now replaced by a second posture which is fairly typical in Type 3. In this the arm is held slightly abducted from the side and slightly flexed forward and fully rotated internally; the elbow is flexed about 20° or 30° from full extension and cannot be extended; the forearm is usually fully pronated and cannot be supinated more than 20°; the wrist may or may not be dropped, and the hand retains some of its ulnar adduction. The effect of these contractures on the function of the arm is very crippling. With the elbow fixed at the side, for instance, the hand cannot be carried from the front of the body laterally to the line of the arm because there is no external rotation of the humerus possible. The absence of supination is therefore very marked, and as a result the hand is almost useless.

FIG. 4.



A, Normal shoulder. B, Subluxated shoulder.

Abduction and forward elevation of the arm are also weak so that the hand, even pronated, cannot be raised to the mouth. Further scapular rotation, assisted by throwing the affected shoulder backwards to raise the ribs in front, adds but little more elevation to the level of the hand. (See Figs. 2 and 3.)

With the absence of functional activity disuse of the limb naturally follows very soon, the contractures become consolidated, vascular changes occur in the extremity of the limb, and an important subluxation is produced in the shoulder-joint. Frequently there is a subluxation of the head of the radius. Growth of the shoulder girdle and of the limb bones is seriously impeded, so much so that the child is apt to lose his balance and often stumbles from this cause.

FIG. 5.

Showing recovery after suture—right arm.

The subluxation of the shoulder-joint appears after several months. It is easily overlooked in fat infants, but the rounded prominence of the humeral head, behind instead of in front of the tip of the acromion process, is characteristic. The humeral head looks backwards and lies on the postero-inferior margin of the glenoid cavity. It is held there by the strong internal rotation of the contracted subscapularis and pectoralis major, and by the downward and backward traction of the teres muscles.* The lack of support from the paralysed external rotators, the spinati, assists in this displacement and the joint capsule yields accordingly behind, whilst it contracts up in front.

As time elapses bony changes occur which "fix" the subluxation. The glenoid cavity remains small and undeveloped. It may become flat or even convex. The head of the humerus develops into a cone with a flattened side towards the glenoid. It lies at a lower level than normally. The acromion process, and sometimes the coracoid process, becomes bent forwards and downwards—probably from the unsupported weight of the arm, and forms a true bony obstacle to the reduction of the subluxation. (See Fig. 4.)

Radial subluxation is much less frequent, but must be considered due to the combined paralysis of the supinators and the contracting pull of the pronator teres. Contracture of the biceps may also tend to displace the head of the bone forwards and inwards. Turner Thomas described a case in his series of "Neglected Erbs," and was inclined to argue that this was a congenital injury just as he said the subluxation of the shoulders was, but such an explanation is not necessary in the presence of contractures. I have seen the same deformity follow contractures in infantile paralysis. In older children the crippled arm looks particularly small beside the healthy one, which may show a compensatory development. Other interesting features have been observed.

In one case the scapula was drawn up to the humerus by a contraction of the teres major and latissimus dorsi muscles, and this prevented the deltoid from using its full power on the arm, abduction to 50° only being possible. In another case the only residual weakness is in the external rotators of the right arm. This boy complains that he cannot write at school for long without "cramps" near the shoulder, and writes as well with the left as with the right hand. He has an interesting sympathetic paresis which has left him with distinct underdevelopment of the right side of the face, enophthalmos with pseudo-ptosis and a contracted pupil. In this case sympathetic involvement has not had its usual unfavourable significance.

When supination has recovered there is usually only a minor degree of weakness in the shoulder muscles, but contractures and subluxation when present convert this into a much more disabling condition. Recovery takes place from below upwards as a rule, so that in the Erb type of palsy any lingering paralysis in the forearm or hand means a grave prognosis.

The *electrical reactions* of the muscles of this group are not typical when partial recovery has ensued. I have generally found that the posterior fibres of the deltoid, the spinati, and the supinators give a feeble response with faradism and a brisk response with galvanism when the polar reaction may be normal or reversed. Thomas disputes any change in his attempt to substantiate his shoulder-joint theory of origin.

Sensory disturbances have only been found in the whole arm type, and then usually over the ulnar side of the hand and lower forearm. In such cases sensation to "pain" seems to be lost over almost as wide an area as "touch." Sherren has shown that section of the fifth cervical root is not usually accompanied by anæsthesia, and even the sixth cervical may be cut in some cases without any appreciable change in sensation. This, of course, accounts for the absence of disturbance in the Erb type of paralysis.

* The teres minor has been shown to draw down the humerus and keep the head of the bone in the glenoid cavity when the deltoid comes into action.

Operative Treatment.

Expectant measures are only justified in cases where full recovery is anticipated, or when no operative interference is contemplated. Once it is evident that only partial recovery will result, the question of operation should be considered. A. S. Taylor states that recovery should occur, if spontaneous, within three months. Wyeth and Sharpe advocate operation at one month if the lesion remains complete, and at three months if full power is not then regained. In 1903 the late Robert Kennedy, of Glasgow, advocated operation at 3 months of age, and his results are without doubt the most convincing of any. I have never explored the plexus at this early age. The three infants upon whom I operated were $1\frac{1}{2}$, $1\frac{3}{4}$, and $^{11}/_{12}$ years of age respectively, and the fourth was a boy of 9 years. There is no doubt, however, that the longer one waits the more firm is the scar-tissue about the roots of the plexus, and the greater is the actual gap, after a resection, between the nerve ends. At the same time growth changes have occurred which a successful early operation will eliminate. Operation was undertaken when the electrical reactions indicated a nerve block, and in each case was looked upon as an exploratory procedure. In two of the four cases it was possible to proceed further and to resect damaged nerve roots and unite the free ends accurately; but in the other pair it was only possible to dissect adherent and scarred fascia from the front of the plexus.

Clinical Records.

CASE 2.—First child. Male. Very difficult labour. Instrumental delivery with chloroform. Markedly asphyxiated. Vertex presentation. Left arm showed Type 1 paralysis. Attended hospital first when 3 months old. Contractures beginning to form. Splint ordered and worn from fourth month. Massage and electrical treatment given for a year. No improvement of any importance. Electrical reactions taken gave nil response to faradism in deltoid and weak response to faradism in spinati. Operation when 18 months old (8/3/24). External neurolysis. Dense cervical fascia removed exposing only atrophic strands in place of fifth and sixth cervical roots. No repair possible. Latest report on arm shows: General posture of paralysis remains but without contractures. Arm can be elevated forwards to 90°. Elbow flexed to nearly 90° and forearm supinated beyond mid-position. There is still some internal rotation but no subluxation. Child can use hand to steer a scooter.

CASE 3.—Fifth child. Male. "Shoulder presentation." Long labour. Chloroform and manipulation. Right arm shows Type 2 paralysis. First attended hospital when 3 months old. Sent to me by Dr. Glen Davison when 9 months of age. Arm had become Type 3. Splint ordered, with massage and movements. Electrical reactions continued to show no response to faradism in deltoid, spinati, and biceps, and only a feeble response to galvanism in biceps. At this time he could abduct the arm forward to 45°, supinate to mid-position, flex elbow fairly well, but had no external rotation. Operation when $1^{9}/_{12}$ years old (26/4/24). Thick fascia removed. Fibrosed fifth cervical root and twig from fourth cervical found and resected with suture of cut ends. (See Fig. 5.) Latest report is illustrated by accompanying photograph, where it is seen that he can abduct and elevate arm beyond 90°, externally rotate, and supinate.

CASE 4.—Vertex presentation; delayed shoulder. Chloroform and instruments. Asphyxia. Type 2. Irritable. Attended hospital at 1 month. Massage given. Referred to me by Dr. Davison at 11 months with no improvement. Electrical reactions showed nil response to faradism in deltoid, biceps, and brachialis, but biceps and all others reacted to galvanism. Immediate operation (20/9/24). Severe lesion of fifth and sixth spinal roots, with a second tear distal to upper trunk all involved in dense scar tissue. Fifth cervical root atrophic. Tension suture inserted to approximate distal nerves to stump of sixth cervical root. Re-exploration two weeks later to attempt to secure a nerve suture, but this was at once found to be impossible and wound was closed. Latest report: Arm hangs in position of Type 1, and can be moved very little. Sympathetic pupillary change is present in this case, and the prognosis is hopeless.

CASE 5.—Nine years. Male. Thirteenth child. Vertex presentation. Short labour. Both arms paralysed at birth. Right recovered in one month. Left shows clinical picture of Type 3. Contractures and subluxation present. Electrical reactions. To faradism: very weak response in posterior fibres of deltoid, some inactive. Doubtful response in supraspinatus. No response in infraspinatus.

Supinators both feeble. Flexors active to galvanism. Brisk response with A.C.C.>K.C.C. in affected muscles. Operation, 5/5/25. Taylor's combined operation on shoulder-joint and plexus. With regard to the plexus a firm area of fibrous tissue was found in an attenuated fifth cervical root. This was resected and suture of nerve ends found possible. It is too early, of course, for results.

In each of the cases the weak arm is raised in a plaster case and fixed with the head inclined towards it to take tension off the sutured nerve ends.

Treatment of Contractures and Subluxation of Shoulder.

It will be seen that in the last case an attempt was made to deal with the complications of contractures and the subluxation. This represents a useful line of attack to improve the function of the limb. Indeed, so great an improvement is said to follow this that Thomas claims to cure the disability and the palsy by so doing.

Most of the patients exhibiting these complications were still below the age of 6, but two were 9 and one 15½ years of age. In the younger patients the bony changes are less marked, but in the older group the subluxation is very prominent, and the acromion and coracoid processes act as bony obstacles to reduction and elevation of the humerus. The manipulative method of Whitman is applicable, therefore, to the younger children, or one or other of the operations described by Fairbank, Sever, Thomas, and Taylor may be utilised in any of the cases.

I have treated three by open operation, in each case combining the division of the pectoralis major and subscapularis insertions (Sever's method) with section of the inner part of the capsule of the joint (as Fairbank suggested), because without it full replacement of the humeral head was found to be impossible. In Case 5 the coracoid process had to be partly removed, and the coraco-humeral ligament divided to allow of full external rotation. The short head of the biceps was, therefore, sutured to the side of the coracobrachialis and pectoralis minor. The after-treatment of these cases is still progressing. Plaster is applied with the arm externally rotated and abducted, the elbow flexed and forearm supinated, and after three weeks a Taylor's splint replaces this so that movements, at first passive, and massage may be practised once a week. When the new joint is consolidated and the muscles have regained control the splint will be discarded. In these cases Taylor now combines exploration of the plexus, and instead of plaster he uses a special head and arm brace for three months.

One small group of cases remains in which complete atrophy of the deltoid and spinati is present. If scapular movement is present arthrodesis of the shoulder-joint will improve the usefulness of the limb. Such a procedure has not yet been tried.

This communication is a preliminary one, and will be followed by a further report on the cases under treatment. My thanks are due to Dr. W. Ogden and Dr. Glen Davison for their cases, and to Dr. George Hall and Mr. H. M. Johnston for the opportunity of examining their cases.

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A REPORT UPON NINETY-TWO CASES OF RHEUMATIC DISEASE IN CHILDHOOD.

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THE Horsfall hospital wards of St. Mary's Home, Broadstairs, have, since 1921, a period of three and a half years, admitted 92 cases of rheumatism, carditis, and chorea. Their treatment has been the provision of fresh air, sunlight, warmth, and good food, combined with an amount of rest varying in accordance with the amount of active infection; this entails regular medical supervision and good nursing management to ensure contentment of the children while under considerable restraint. The treatment aims at preventing or arresting the progress of rheumatic infection, especially in the heart. At the end of certain periods, depending at best upon clinical and at worst upon financial considerations, the children are returned home. Subsequently, by means of circulars, the discharged cases are sent for and re-examined in London. In May, 1925, about two-thirds of those circularised arrived for this purpose, and I may here remark that the proportion of patients so responding is bound to fall as time goes on—an illustration of the disadvantages with which one works single-handed, compared with advantages possible under some such system of team-work as I venture to recommend below.

The report falls into two parts: (*a*) The results of observations of the children while in the wards; (*b*) the results of subsequent re-examination of discharged cases.

In estimating results, the subjective sensations of the patients and their parents' opinions are of very slight help, except in severe carditis and in chorea; experience points to the following three criteria as furnishing the most useful indications of progress or the reverse: (1) Quiescence or recrudescence of symptoms; (2) constitutional signs; and (3) cardiac physical signs.

(*A*) *Observations in the Wards.*

(1) *Recrudescence of symptoms* may be summarised as follows:—

(*a*) *Acute Rheumatism.*—There has, in three and a half years, been only one case that has had any severe arthritis with fever, and this was a girl with very severe pancarditis, who died later on. Only one other case complained of occasional pains in the limbs, and this was without fever.

(*b*) *Chorea*, once abolished, has recurred in three cases only—in all of them as a result of a definite emotional upset. In two other cases the movements were never completely got rid of; they appear to be more difficult to check in girls of ample physical proportions.

(*c*) *Tonsillitis* is more common and is troublesome, and the cases are quickly isolated owing to their being very infectious; in the first "epidemic" that occurred the hearts of at least two children seem to have suffered severely.

(*d*) *Simple Pyrexia* occurs occasionally and, as it yields to salicylates in most cases, is probably rheumatic; it has twice been accompanied by fresh carditis.

(*e*) *Scarlet Fever* occurred in one case and was followed by fairly severe scarlatinal rheumatism without further carditis.

(2) *Constitutional signs* are noted as follows:—

(*a*) *Pallor* seldom persists; if it does so it is a bad sign, but "a good colour" is often a sign that flatters.

(*b*) *Weight* goes up in all but rapidly deteriorating cases; only a very rapid putting on of weight can be taken as a really good sign by itself.

(*c*) *Pyrexia.*—The nearer the temperature tracing approaches to a straight line, the better a case appears to be doing.

(*d*) *Heart Failure* occurs only in the severest cases; a heart may be able to respond to a considerable degree of effort while being slowly and progressively infected. Response to effort is therefore no criterion.

(*e*) *Tachycardia.*—The rheumatic poison has an especial effect in producing a rapid and excitable heart-beat, quite apart from gross cardiac lesions; in such cases there is little or no respiratory variation in the pulse-rate. Correct charting

of the pulse-rate is of the utmost importance, since the visit of the doctor may cause a temporary tachycardia. There is no effect of treatment so definite as the change, after a longer or shorter period of time, from this rapid excitable pulse-rate, to one of a more deliberate and uneven rhythm, the first sign of improvement being a noticeable slowing of the rate on instructing the patient to expire slowly after taking a deep breath; as recovery proceeds the sign becomes more and more marked. Digitalis is successful in slowing the rate of these hearts in a certain number of cases, but the effect is usually lost on discontinuing the drug. While it is possible that a slowing of the pulse might also be obtained in children allowed to get up and to go about, I feel that the questions of immunity which determines the progress or arrest of infective carditis are more safely dealt with under the conservative methods of rest in bed.

(3) *Physical Signs in the Heart.*—Dilatation of the heart borders should be regarded, when following an attack of rheumatism, as evidence of an infected myocardium. It is often accompanied by a systolic murmur which sufficient rest in bed abolishes. The mitral diastolic bruits, described by Dr. W. B. Cheadle, are very common and are of the utmost importance in prognosis, especially as regards mitral stenosis and ultimately auricular fibrillation. As in the case of tachycardia, the difficult question of valvular infection seems to me to be more safely dealt with by rest in bed until constant auscultatory signs and a quiet pulse-rate show the endocarditis to have been arrested. Aortic murmurs do not appear to undergo any favourable modification.

The result of the work as organised in the wards is that there is a slow but steady stream of children passing from the rest wards to the convalescent ward. Out of the 92 cases under treatment 73 have been girls; the average age on admission was 9·3 years, the youngest child having been 4½ years old. The average stay of the patients was six months. Beginning in October education will be given in the wards by a fully certificated mistress.

(B) Examination of Discharged Cases.

Of 75 cases discharged before the spring of 1925, six had died; all were cases of severe and advancing cardiac rheumatism and were, practically speaking, sent home to die. Of the remaining 69 cases just two-thirds were re-examined, and of these 46 cases 15 showed, or had shown, subsequent signs of active rheumatism, chorea, or carditis. In eight of these there had been fresh acute rheumatism, shortly after returning home; in two cases mitral disease had slowly developed along with continual chorea; in two cases there was progressive evolution towards mitral stenosis in spite of reports of perfect health from the patients and their mothers; and in three cases there had been chorea off and on for from one to two years without any carditis. The remaining 31 cases had held their own and had had no relapse.

While some of these cases appear to have justified the results of the treatment they have had, one is bound to admit that other cases, who, after a short period of treatment, were withdrawn against advice, had done equally well; on the other hand, certain cases, thought to have done well at Broadstairs, were disappointments. There are, I think, so many variations in the conditions to which these cases are exposed, that in order to investigate fairly the results of any type of treatment for rheumatism in childhood, it would be desirable to select a series of cases as uniform as possible.

Some of these variable factors may here be reviewed.

(1) Number of attacks of rheumatism before beginning treatment.
(2) Presence or absence and severity of carditis.
(3) Mode of onset of disease—acute, insidious, or choreic.
(4) Home conditions of the patient, especially after returning from treatment. One of my most disappointing cases said that the damp stood upon the walls of her home.
(5) Length of time under treatment.
(6) Performance or otherwise of tonsillectomy as part of the treatment.

Doubtless many of the variations in the onset and virulence of rheumatic infection are bound up with questions of individual and tissue immunity, to which at present we have no answer. Nevertheless, it should be possible by careful selection from a large number of cases to form groups for observation in which all the above variable factors should be as uniform and as favourable as possible. For such a purpose the following organisation would seem to be required:—

(1) A *central building* in London (or other city), by means of which: (*a*) Accurate histories could be obtained from patients' relations. (*b*) Cases could be taken, if desired, by reference from the general hospitals. (*c*) Visitors could report on home conditions and endeavour to get house repairs effected in special cases. (*d*) Physicians could select and group fresh cases, probably giving preference to early cases, as in tuberculosis. They would also be able to re-examine cases returned from rest homes. (*e*) Records could be kept.
(2) *Rest homes* for carrying out treatment.

From re-examination of these discharge cases one cannot fail to learn that the most accurate prognostic signs are to be found in repeated examinations of the heart; quiescence of symptoms is deceptive, and in America they have learned that even three years must elapse before it can be assumed that a favourable case is likely to be free from recrudescence. Similarly, constitutional signs are unreliable. I saw a boy in May, 1925, who had a really healthy colour, and had recently been running about; he has had about two attacks of rheumatism yearly since 1921, the heart is greatly enlarged, and shows mitral systolic and diastolic bruits, and an aortic diastolic murmur: his last attack had been in February, 1925. If, however, by any management, such unfavourably developing physical signs can be arrested, then, as the period of life approaches at which the heart is less susceptible to infection, the chances of an active and useful life are increased.

Clinical and Laboratory Notes.

TWO CASES OF LATERAL SINUS THROMBOSIS.

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THE following cases of lateral sinus thrombosis may be considered worthy of record, as in each instance I performed a radical mastoid operation and ablated the infected lateral sinus without tying the internal jugular vein, with successful results.

CASE 1.—B. E., a girl aged 14, was admitted to hospital with a history of discharge from the left ear for four years. She complained of pain over the left side of the head and in the left ear, and gave a history of attacks of shivering and vomiting. On admission the patient was very ill, with a temperature of 97° F., pulse-rate 120, and she had tenderness over the left mastoid process. A mastoid operation was performed and a large extradural abscess evacuated. There was thrombosis of the lateral sinus down to the jugular bulb; the sinus was opened and a septic clot evacuated. The jugular vein was not tied. On the following day the patient's condition was still bad, but there had been no rigors; on lumbar puncture the cerebro-spinal fluid was found to be normal. Two days later the temperature rose to 104° F. and the pulse-rate to 140. She vomited several times during the night. There were no rigors. The wound was reopened and more septic clot was turned out of the lateral sinus. From this date the patient made an uninterrupted recovery.

CASE 2.—I. A., a woman aged 21, was admitted to hospital with symptoms of acute mastoiditis on the left side. Her temperature was 103·6° F. and her pulse-rate 136. A mastoid operation was performed; the bone was very sclerosed, and a perisinus abscess was present. The lateral sinus was exposed for one inch, and the wall of the sinus was seen to be healthy and felt to pulsate. Her condition improved after the operation for three days, when her temperature rose again. On lumbar puncture the cerebro-spinal fluid was found to be normal; a blood count gave a leucocytosis of 12,500 per c.mm. Two days later she had two rigors; the cerebro-spinal fluid was still normal, and the leucocyte blood count was 15,000 per c.mm. The wound was

reopened and the lateral sinus was further exposed; the wall was found to be covered with grey granulations. The sinus was opened and a septic clot evacuated; there was free bleeding from both ends of the cut sinus. The internal jugular vein was not tied. Three days later the leucocyte blood count had come down to 6000. She made a slow but uneventful recovery.

Comments.

The tendency of recent writers, particularly in America, in dealing with the surgical treatment of lateral sinus thrombosis, has been to advocate ligation of the internal jugular vein in every case. The two cases here reported show that no hard-and-fast rule should be laid down about the necessity for invariable ligation of this vein. These patients are usually so gravely ill that it is eminently desirable for the surgeon not to undertake measures of greater severity than are absolutely necessary. Mr. Richard Lake has emphasised the importance of speed in carrying out surgical procedures in such cases. Ligation of the internal jugular vein does not necessarily prevent extension of the infection to the systemic circulation because of the establishment of collateral venous circulation. Laurens,[1] moreover, points out that the statistics of ligation and non-ligation show equal percentages of recovery.

I desire to express my thanks to Mr. Lake for the opportunity of operating on these two cases in his wards at the Royal Ear Hospital.

A CASE OF ATROPHY OF RENAL ORIGIN IN A YOUNG INFANT.

BY CATHERINE CHISHOLM, M.D. MANCH.,
AND
EDITH F. WILLOCK, M.B., B.CH. DUB., F.R.C.S. IREL.

IT seems probable that the following case of renal atrophy in a young infant is worthy of record.

A female infant, aged 5 weeks, was admitted to hospital with a history of dyspepsia and loss of weight. She was an eight-months infant and had been almost entirely breast-fed. On admission she weighed only 4 lb., and showed signs of recent wasting; no cardiac, respiratory, or other abnormalities were detected; the urine was not examined as maintenance of warmth and careful handling were essential in her existing condition.

The patient was given breast milk feeds but failed to make much progress, though dyspepsia was not evident, and after a month she was placed for three weeks in an oxygen cot, in which she breathed air with 40 per cent. oxygen and the accumulation of her own expired carbon dioxide for some eight hours out of each 24.[1] With this treatment satisfactory progress and gain in weight commenced and continued for six weeks after removal from the cot, although during this period the breast milk was discontinued.

Improvement was so satisfactory that the infant was vaccinated, and lactified milk feeds were being changed to simple milk and water preparatory to discharge, when an attack of dyspepsia supervened. The attack was not severe but it apparently sufficed to upset the balance, and for the ensuing eight weeks the infant remained obstinately stationary in weight, and the clinical picture was definitely one of atrophy.

There were occasional manifestations of mild dyspepsia, the appetite was poor, and the skin developed a curiously yellow tinge, though no bile was present in the urine. At this time a blood count showed 3,530,000 red cells and 20,000 white cells, with hæmoglobin 45 per cent. A second period of treatment in the oxygen cot was then given for a month during which some general improvement and gain in weight occurred. Some diarrhœa was present at times. Improvement continued for a short period after removal from the cot, but a relapse then took place, with anorexia, dyspepsia, and general deterioration. Dietetic treatment had no effect, and finally pulmonary complications developed and death ensued (aged 7 months).

The blood count a few days before death showed 5,500,000 red cells, 22,900 white cells, with 55 per cent. hæmoglobin. Von Pirquet reactions were negative, and X rays, at the age of 5 months, showed no bony changes.

Post-mortem examination revealed some pulmonary consolidation, a dilated stomach, enlarged mesenteric glands, and exceptionally small, finely granular kidneys with adherent capsules. Microscopically both kidneys showed well-marked fibrosis and atrophy, due to long-standing chronic nephritis, probably fœtal in origin.

Similar Cases on Record.

Barber[2] discusses ten cases of renal dwarfism and refers to others recorded by Paterson, Fletcher, and others. Greene[3] has reviewed the literature on chronic nephritis in children, and has collected 27 cases. Thursfield[4] has reported a case of chronic interstitial nephritis (? congenital) and renal dwarfism in a girl aged 12½. Barber's cases ranged between 11 and 20 years of age, and three were still alive at the time of writing. In Greene's series the eldest was 10 years old and only three were in the first year of life. In all cases the children were very small and undersized from birth; Barber states that as a rule the lack of development becomes more striking after the sixth or seventh year.

Albuminuria was present in all of these cases in which the urine was examined (26), except one, and in this case the urine was only examined by a nurse; in one of Barber's cases no albumin was present at the age of 3½ years, but appeared later. Bony deformities, mainly genu valgum, were present in eight out of Barber's ten cases; these usually developed later than those of ordinary rickets, but radiologically resembled them. Osseous changes were also present in Thursfield's case, and in those of Greene in which radiographs were taken. Post mortem the kidneys examined were all very small and granular and showed marked chronic interstitial nephritis, probably of long standing.

Commentary.

The case recorded in this note undoubtedly belongs to the class of renal atrophies; clinically, the infant was definitely atrophic, and was, indeed, selected in consequence as a good experimental case in which to observe the effects of oxygen on atrophic infants. It is unfortunate that no record of the presence or absence of albuminuria was made; there was never any œdema or polyuria to call attention to renal disease, and albuminuria may have been absent, as in the case described by Barber referred to above. The absence of osseous changes, as shown by X rays, in the case described may be accounted for by a late development of these changes.

It is extremely uncommon to find any record of this rare condition at such an early age; Greene has collected only three cases under 1 year of age from the literature, and in none of these had any X ray examination been made. Our case suggests that the bony changes arise later, as these have been almost invariably recorded in older children, if examined by X rays.

References.—1. Botwood, Raper, and Willock, Brit. Med. Jour., 1925, i., 730. 2. Barber: Quart. Jour. of Med., 1920–21, xiv., 205. 3. Greene: Amer. Jour. Dis. of Children, 1922, xxiii., No. 3, p. 183. 4. Thursfield: See Wyllie, Proc. Roy. Soc. Med., 1924, xvii.

Manchester.

[1] G. Laurens: Chirurgie de l'Oreille, 1924, p. 265.

ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—At a meeting of the governors, presided over by Princess Beatrice, it was decided to reconstruct the old portion of this hospital at Ryde. The scheme, which will cost £15,000, includes the enlargement of the X ray department, which deals with more than 3500 patients annually.

HOSPITAL ACCOMMODATION AT LEEDS.—Dr. J. Johnstone Jervis, medical officer of Leeds, reports that the hospital accommodation of that city is inadequate in the sense that it is badly distributed rather than insufficient. All the voluntary institutions have long waiting-lists, while the Poor-law infirmaries are only partially occupied. "Some of the latter," he says, "are buildings of comparatively modern structure, well situated and well equipped, and would make ideal hospitals for the treatment of the sick of all classes of the community, including those who are able to pay a reasonable fee for their treatment." He therefore suggests that the law should be so altered as to allow of the doors of the Poor-law infirmaries being opened to the whole community.

Reviews and Notices of Books.

APPLIED MEDICINE.

Social Aspects of Mental Hygiene. Addresses by FRANKWOOD E. WILLIAMS, C. MACFIE CAMPBELL, ABRAHAM MYERSON, ARNOLD GESELL, WALTER E. FERNALD, JESSIE TAFT. London: Humphrey Milford; Oxford University Press. New Haven: Yale University Press. 1925. Pp. 150. 7*s.* 6*d.*

An Approach to Social Medicine. By FRANCIS LEE DUNHAM, M.A., M.D., Lecturer on Social Medicine, Johns Hopkins University. Baltimore: The Williams and Wilkins Co. 1925. Pp. 242. $4.00.

THE psychiatric social worker is a species peculiar to the North American continent where, however, it flourishes abundantly. In the *Mental Hygiene Bulletin* for June, 1925, there were described courses of instruction in no less than 11 schools, colleges, and universities which are organising summer teaching in psychiatry and mental hygiene for lay women. The students at these courses will for the most part have been college graduates. By this time they have been taught about complexes and fixations, about adenoids and tuberculosis, and some of them have even had some superficial experience of the use of a stethoscope. Thus equipped, they have no difficulty in finding professional employment; courts, prisons, hospitals, asylums, industrial corporations, and innumerable voluntary health agencies demand their services. The average doctor they feel, and perhaps reasonably, is rather less well equipped than themselves to deal with behaviour problems, though he may be consulted when it is desired to rule out adenoids. For the most part they will treat the psychiatrists with respect, for thence comes their learning—but they are a profession sui generis and responsible not to the medical profession, nor to any ministry of health, but only to the lay organisation which happens to employ them. The lectures collected under the title Social Aspects of Mental Hygiene are examples of the tuition which the psychiatric social worker is getting; selected examples it must be admitted, for the writers are among the best known and rightly respected of American mental hygienists. It is as such that English doctors should read them, not expecting to learn anything about the origins of behaviour that they had not heard of before.

Dr. Dunham's book goes much deeper. A practising psychiatrist, living, one imagines, in an atmosphere of philosophy and sociology, he has been brought to examine very fundamentally the tendencies both of social service and of psychiatry. "The aim of preventive science, applied to welfare," he finds, "embodies a synthetic reconstruction of the existing situation, in the accomplishment of which an analysis of the various social fields is fundamental." Society is a laboratory wherein, if we would learn, the experimental method must be rigidly applied and the resulting knowledge reduced as far as may be to comparable, measurable, data. Among the basic factors of social life which we must learn increasingly how to estimate—and estimate quantitatively—are health, intelligence, and character. The greatest of these and the hardest to assess is character. But the analytical method, derived from much experience and insight, which Dr. Dunham describes, does indeed constitute an approach. In spite of an unfortunate addiction to four-syllable words, Dr. Dunham's book is easily read and full of stimulating and well-organised ideas.

Personal and Community Health. By CLAIR ELSMERE TURNER, Associate Professor of Biology and Public Health in the Massachusetts Institute of Technology. St. Louis: C. V. Mosby Co. 1925. Pp. 426. $2.50.

THIS book differs from the numerous other college text-books of hygiene at present rife in America, in that it combines public with personal health. In this respect it registers an advance. The layman is likely to get a more wholesome as well as a more useful knowledge of hygiene when he considers the subject as a social reformer rather than as a valetudinarian. Moreover, as this text-book shows, it is possible to write more convincingly about the principles of preventive medicine than about the rules of private well-being. The latter are so numerous, so varied, many of them so ill-founded, that any writer must be constantly on his guard lest he preach to the less critical college student doctrines that he knows would be challenged in a society of physiologists. Such a doctrine is the rule that we should drink six glasses of water a day, and it is here presented (p. 33) without regard to the heat of the day or the activity of the drinker.

Three-quarters of the book is occupied with the teaching of preventive medicine. The outline followed is as orthodox as the teaching. There is a short history of preventive medicine in which the origins of epidemiology are curiously introduced after the work of Pasteur. There is very properly a chapter on immunity which contains some ingenious guesses, as, for example, that anaphylaxis explains a possible inherited susceptibility to tuberculosis; chapters on water-supply and waste disposal, which are the best in the book, and as an appendix the 1916 report of the Committee on Standard Regulations of the American Public Health Association, which describes briefly the commoner communicable diseases and the methods of control then available.

The book contains few errors for a first edition, is well printed and bound, and as readable as college text-books are wont to be.

SURGERY.

A Synopsis of Surgery. Seventh edition. By E. W. HEY GROVES, M.S., M.D., F.R.C.S., Surgeon to the Bristol General Hospital, and Professor of Surgery, Bristol University. Bristol: John Wright and Sons, Ltd. 1925. Pp. 671. 17*s.* 6*d.*

THREE years have elapsed since the sixth issue of this useful synopsis, and throughout the book there is frequent evidence of careful revision, the subject-matter as presented being absolutely abreast of modern surgical advances. The section on abdominal disease, by Mr. D. G. Tasker, is a good example of the general standard of excellence. It is pleasant, for example, to find Barnard's classification of subphrenic abscess clearly given, and a compendious account of diverticulitis of the colon. A number of new line drawings are designed to elaborate the necessarily short description of certain subjects. It is really extraordinary what an amount of up-to-date surgical knowledge Prof. Hey Groves has compressed into so small a volume.

Infections of the Hand. Fifth edition. By ALLEN B. KANAVEL, M.D., Professor of Surgery, Northwestern University Medical School; Attending Surgeon, Wesley Medical Hospital, Chicago. Philadelphia and New York: Lea and Febiger. 1925. Pp. 449. $5.50.

IT was largely owing to the work of Kanavel in Chicago that this subject began to attract more widespread attention in this country, and his monograph is now well known. The book is happy alike in the practical research upon which the clinical work is founded and in the presentation of the diagnosis and treatment of these grave infections. The present edition has been improved in one very important respect. In previous editions, though the more serious disasters following inefficient treatment were described, their treatment (apart from prophylaxis) was not made very clear. A new section has now been introduced, dealing exhaustively with the treatment of stiff fingers, large scars with contractures, and so on. Continuous elastic traction on fingers fixed either in

flexion or extension is excellently illustrated. How to make good skin defects from the abdominal wall is also given in greater detail. The book should certainly form part of the student's and practitioner's armamentarium.

Diseases of the Rectum and Pelvic Colon. Second edition. By MARTIN L. BODKIN, M.D., F.A.C.S., Rectal Surgeon, St. Catherine's Hospital, Associated Surgeon, Broad Street Hospital, and late Rectal Surgeon of the Bushwick, Williamsburg, and St. Mary's Hospitals, New York. New York: E. B. Treat and Co. 1925. Pp. 487. $6.

THIS edition is improved by the addition of three chapters and by general revision. There is a new chapter on the relation of the intestinal flora to the simple catarrhal diseases of the colon and one on the irrigation of the colon, which emphasises the principles of a treatment which has been much abused. The author recalls the original and correct technique and rationale. There are admirable introductory chapters on general examination of the patient which will teach the student how to approach a case of rectal disease, and no reader can forget the value of digital examination. The stress rightly laid on this recalls the teacher who, for the sake of his students, has a finger-stall hanging at every bedside. The work of English surgeons, it is pleasant to find, has not only been noticed in America, but is evidently thought worth mention in a text-book. Both students and practitioners will find this well-printed and illustrated book useful.

Minor Surgery. By L. R. FIFIELD, F.R.C.S. Eng., Surgical First Assistant and Registrar; Demonstrator of Minor Surgery, London Hospital. London: H K. Lewis and Co., Ltd. 1925. Pp. 431. 12*s.* 6*d.*

THE author has yielded to the importunities of his friends in writing a book on minor surgery as it is taught at the London Hospital and the interest centres largely in the local colour of the teaching. He closely follows Kanavel in treating infections of the fingers, and this section might with advantage have been given in even greater detail. There are numerous illustrations and the line-drawings are not uniformly good. The book will have to compete with a considerable number of other handbooks on minor surgery already on the market.

MALIGNANT DISEASE OF THE TESTICLE.

By HAROLD R. DEW, F.R.C.S. London: H. K. Lewis and Co., Ltd. 1925. Pp. 168. 21*s.*

THIS book is the author's Jacksonian essay on the pathology, diagnosis, and treatment of testicular new growths. After dealing with the anatomy and development of the testicle he discusses, what has long interested and at the same time puzzled pathologists, the morbid anatomy and histology of new growths of the testicle. The multiplicity of references given in this chapter is alone sufficient to show the industry with which the author has foraged amongst works bearing on this subject, and taking into consideration the confusion that still exists, his method of classification and description is remarkably clear. In the final chapters dealing with prognosis and treatment he puts in a strong plea for the radical operation. In his opinion the results of simple orchidectomy have long been a reproach to surgery, and in all cases, except those in which a palpable mass can be felt, an effort should be made to remove the lumbar glands as well as the diseased testicle. Although far removed from the testicle the glands are readily accessible, and in about 60 per cent. of cases admit of removal. The work contains many excellent illustrations and five coloured plates, and is certainly the best monograph on this subject that we have come across in the English language.

EMPLOYMENT AND WELFARE OF JUVENILES.

A Handbook for those Interested in Choice of Employment and After-care. By O. BOLTON KING. London: John Murray. 1925. Pp. 244. 6*s.*

THE theme of this book is the after-care of children who have passed the school age, and probably most readers will be surprised at the very wide net spread by after-care agencies, whether official, through State or local municipal provision, or through more or less private non-official societies. In the author's own words, "After-care takes the whole of the youth's life within its province, looks after his education, his amusements, his moral health—aims at making the man and the citizen." And besides this general welfare movement, there are the numerous "choice of employment" schemes, which are aimed at fitting square pegs into square holes. In respect to these Britain lags behind Germany, Belgium, and the United States, but in matters of general social welfare Britain may fairly claim to lead. The author deals with the subject in a very comprehensive way; few agencies can have escaped his notice. On this account the book is invaluable to all social workers. Its chief scientific interest is in dealing with vocational selection by means of tests. It is already clear that general intelligence tests alone are of little value, that tests of specific capacities are essential, and, in addition, that temperamental qualities require study. Having decided what specific capacities are required in any particular branch of trade, and having devised certain tests for these qualities, there still remains to discover how far the results obtained correlate with the actual working capacities of the workers. Much experimental work, therefore, is still necessary, and, as Mr. King points out, even with a perfect system of tests it not infrequently happens that the work for which a man has great aptitude is not congenial to him. Mechanical efficiency must be supplemented by contentment. An appendix gives valuable information regarding a large number of common trades.

The practitioner called upon to express opinions on the physical fitness of youths for certain trades will find here a basis for a much wider view than the purely medical.

NURSING.

Handbook for Queen's Nurses. First edition. By "Some Queen's Superintendents." London: The Scientific Press, Ltd. Pp. 76. 1*s.* 6*d.*

A HANDBOOK of district nursing has long been a desideratum, and this one, written by "Some Queen's Superintendents," although a modest volume, should help trained nurses who are beginning work on the district. So interesting is the reference to the history of district nursing that one regrets its brevity. The chapter on the duties of the district nurse reveals at once the enormous opportunities presented to those who undertake the nursing of the sick in their homes. "Her task is not only the treatment of disease but the education of her patient and his friends in the essentials of hygiene, so as not only to prevent all avoidable infection, but to raise the standard of health in each household she visits." It is this aspect of district nursing that makes it attractive to nurses whose gifts in these directions fit them for posts of responsibility.

A Reference Handbook for Nurses. Fifth edition. By AMANDA K. BECK, R.N. London and Philadelphia: W. B. Saunders Company, Ltd. Pp. 288. 7*s.* 6*d.*

THIS handbook of convenient size for quick reference should achieve the end for which it was designed, being well produced and containing well-selected information invaluable both to student nurses and to private nurses called upon to meet emergencies. The subject-matter is based upon a collection of notes made by the author throughout her training and nursing experience, and is obviously the result of intelligent observation and the careful record of facts. In addition to the notes collected are several articles by eminent physicians

and superintending nurses, and the whole comprises a book eminently suitable to the needs of a nurse, and one which in time would come to be regarded as a friend and support. The chapters on the Preparation of Foods and Food Constituents are noticeably good, and there are a few clear illustrations.

Medikamentenlehre für Krankenpfleger und Krankenschwestern. Fifth edition. By Dr. PAUL FLEISSIG, Apothecary to the Hospital and Lecturer in Practical Pharmacy in the University, Basle. Berlin and Vienna: Urban and Schwarzenberg. Pp. 197.

THIS book should form a useful addition to a nurse's library. It is concerned with the drugs and apparatus connected with drugs used in hospital and in practice, and gives a simple account of their origin and use which will make the work of the nurse more interesting. It is by no means a book to be learnt off by heart, but is full of useful facts and hints, given by one who likes to have things done properly and who has at his command a large number of contrivances to meet contingencies arising in the wards. The chapter on Winke, the expressive German word for "tips," has evidently been congenial work to the author. We are not astonished to note that the work has reached a fifth edition.

THE LIVING EYE.

Microscopie de l'Œil Vivant. Diagnostic Précoce et Sémiologie des Affections du Segment Antérieure de l'Œil. Par F. ED. KOBY, Bâle. Paris: Masson et Cie. 1924. Pp. 240. Fr.25.

Slitlamp Microscopy of the Living Eye. Early Diagnosis and Symptomatology of Affections of the Anterior Segment of the Eye. By Dr. F. ED. KOBY. Translated by CHARLES GOULDEN, O.B.E., F.R.C.S., and CLARA LOMAS HARRIS, M.B. London: J. and A. Churchill. 1925. Pp. 221. 10*s.* 6*d.*

Dr. Koby's treatise on the use of the slitlamp, especially as it is now available in English, should prove of great value to ophthalmologists interested in what is a most promising innovation in methods of examination of the eye. The slitlamp is rather more of a novelty in this country than it is abroad, and until lately all the apposite literature has been in German. It was avowedly in view of this that Dr. Koby wrote his book for the French ophthalmologist. He has produced a clearly written work in a language inherently suited to the expression of scientific thought, a book which no one interested in the microscopy of the living eye can afford to miss. Precise details of apparatus and technique are given with explanations of the optical conditions present. Certain points, such as the thermal currents in the anterior chamber, the structure of the lens, and the changes in pigmentation of the cornea, are dealt with more fully than in any other book on the subject. The illustrations are good, but lose something in the French edition by the type of paper on which they are printed. In the English edition this fault disappears.

The translators have had a difficult task in dealing with terms of which the English equivalents were often doubtful, but there are a few avoidable errors. On p. 142, the sentence beginning, "In this case the design of the sutures . . . ," conveys a meaning the opposite of the French, and three pages later, dealing with the lens shagreen, the translators use "spherules" for "éléments," thereby losing the nuance of vagueness which is desirable, since these objects are really only appearances. "Markings" would perhaps convey the author's meaning better. These little defects scarcely detract from the usefulness of the English edition, which is on the whole a faithful rendering, and has in one or two particulars improved on the original. The points of the lamp on p. 16, for instance, are brought out much more clearly than in the figure on p. 24 of the French edition, which it replaces. The description of Fincham's apparatus brings the first chapter of the English edition fully up to date.

MORE THINGS THAT MATTER.

By Lord RIDDELL. London: Hodder and Stoughton, Ltd. 1925. Pp. 318. 7*s.* 6*d.*

THIS volume is made up of articles which appeared originally during 1922–24 in *John O'London's Weekly*, and which are now republished in response to requests from readers who have desired their issue in more permanent form. The book is uniform with a previous volume, "Some Things that Matter," whose witty common sense over a wide range of subjects was pointed out in our columns upon its appearance.

None of the chapters in the new volume has any strictly medical bearing, save perhaps two which make up a tolerant discussion of that controversial subject, alcohol. Considering it now as a poison and now as the reverse, Lord Riddell's attitude is almost startlingly fair. He writes as one whom teetotalism suits, "having been accustomed to it all my life," but, though fully aware of the evils and dangers that follow abuse, or even use by the suggestible subject, he is so unbiased as to ask at the conclusion of the first of these chapters the following question: "One thing is certain; a teetotal world would be a very critical one. Would this make for increased happiness? I wonder!" The second of the chapters notes that the temperance movement in this country, as in the United States, has been a necessity arising out of social exigencies created some hundred years ago, when to abstain from intoxicants was almost a social slur. In this little discourse misconceptions regarding prohibition in America are set right, particularly the notion that the legislation was hasty or panicky; while it is still on trial the author, like a sound lawyer, comes to no decision on insufficient evidence as to whether its great object—namely, the increased efficiency of workmen—has been obtained. But he brings to notice the fact which too often escapes attention, that we in this country have for some years been engaged in considerable experiments towards, at any rate, the profound moderation of alcoholic habits. The figures that he quotes are, in his own words, imposing and gratifying:—"the production of beer and spirits has fallen nearly 50 per cent. in ten years, and the proceeds of taxation have risen from £33,000,000 in 1910 to £155,000,000 in 1923. Delirium tremens has practically disappeared, and the death-rate from alcoholism has been largely reduced."

A similar knowledge of detail and fairness of judgment is exhibited by the author through some 40 small chapters, all illustrating pregnant questions and supplying clear-cut and pithy reflections in answer.

JOURNALS.

THE JOURNAL OF PHYSIOLOGY. Vol. LX., Nos. 1 and 2. 1925.—The Influence of O_2-tension in the Inspired Air upon the O_2-tension in the Tissues, by J. Argyll Campbell. It is still generally believed that the O_2-tension in the tissues is nil. The previous researches of the author on the injection of gas under the skin and into the abdominal cavity of rabbits and cats showed that the normal O_2-tension under the skin is about 20–30 mm. Hg, and in the abdominal cavity about 30–40 mm. Hg. These tensions may be regarded as the tensions present in the fluids which exist immediately outside, and bathe the cells of the subcutaneous tissue and the cells of the peritoneum of the abdominal cavity. Decrease of O_2-tension in the air breathed markedly decreases the O_2-tension in the tissues. Increase of O_2-tension in the air breathed markedly increases the CO_2-tension in the tissues, probably because the increase of O_2-tension in the blood decreases the rate at which

CO_2 is removed from the tissues; perhaps the respiratory centre is also concerned.—The Direct Action of Insulin on Fat Metabolism, by H. S. Raper and E. C. Smith. The possibility that insulin might, in addition to its influence on carbohydrate metabolism, exert a direct action on fat metabolism is suggested by the fact of the immediate reduction of lipæmia and acetonuria in the diabetic on administration of insulin. Direct evidence of the actual synthesis of fat under the action of insulin has never been obtained. The views on the subject are conflicting. The authors used mice, as their small size permits of an estimation of the total fat in the body, and they found that in decapitate eviscerate animals, with constant infusion of glucose, no change in the fat-content of muscle occurred under the action of insulin. The evidence obtained does not support the view that fat synthesis in the liver is associated with insulin hypoglycæmia.—The Effect of Pituitrin on the Fatty Acid of the Liver, by R. Coope and E. N. Chamberlain. It was found that injection of extract of posterior lobe of the pituitary body in rabbits and rats is followed by a well-marked increase in the amount of fatty acid in the liver.—Insulin and the Pituitrin "Fat Liver," by R. Coope. The pituitrin effect described in the previous paper—fatty infiltration of the liver—is not accompanied by damage to the liver cell, nor do the injections cause hyperglycæmia or glycosuria. A single dose of insulin given simultaneously with pituitrin profoundly modifies, and, in many cases, completely prevents the pituitrin effect on the liver-fat—evidence of an antagonism, probably of significance in the normal animal.—The Mechanism of Pancreatic Digestion—the Function of Secretin, by J. Mellanby. A secretion of pancreatic juice may be evoked by appropriate stimulation of the vagus only. Vagal juice is generally scanty in quantity, but rich in proteins and enzymes; secretin juice is copious in quantity, but relatively poor in protein and enzymes. The author determined the quantitative composition of this juice under a variety of conditions. The hypothesis is put forward that the enzyme content of pancreatic juice is determined by the vagus nerves, whereas the quantity of bicarbonate solution in which these enzymes are contained is determined by secretin. On this hypothesis secretin may play a subsidiary part in pancreatic digestion, since it only ensures the presence in the intestine of an optimal reaction for the activity of the pancreatic enzymes.—The Influence of the Spleen in Carbon Monoxide Poisoning, by J. Barcroft, C. D. Murray, D. Orahovats, J. Sands, and R. Weiss. In an atmosphere which receives a continuous accession of coal-gas it was found that guinea-pigs from which the spleens have been removed die sooner than either normal guinea-pigs, those from which omentum has been removed, or those from which one horn of the uterus has been excised. Having regard to the fact that in fatal pressure of carbon monoxide the spleen contracts, expelling its contents into the blood, it is suggested that the longer life of the normal animals is due to this accession of hæmoglobin into the blood. The percentage saturation of the blood with CO is almost the same in all the categories of animals.—The Relation in Diuresis between Volume of Urine and Concentration of a Diuretic with the Influence of Temperature upon It, by E. J. Conway. The experiments were made on rabbits under urethane narcosis; the urine was collected from a bladder cannula, and the necessary injections given through the jugular vein. In an animal which has received a large injection of glucose it was found that the rate of flow of urine and the concentration of glucose are related to one another by a formula which is given by the author. A similar formula is found to apply to the concentration of chloride and the rate of flow in saline diuresis. The effect of body temperature on the constants in these formulæ is to cause an increase of 10 per cent. per degree. A similar increase is found with urea.—The other papers are: On the Effects of Different Salts on the Heat-production in Muscle, by E. Sereni. Hæmochromogen and the Relation of Protein to the Properties of the Hæmoglobin Molecule, by M. L. Anson and A. E. Mirsky. The Maximum Work of the Several Muscles of the Forearm, by J. H. O. Reijs, and a Closed Circuit Heart Lung Preparation, by I. de Burgh Daly, to show the effects of alterations in blood volume. An increase in the volume of circulating blood produces, with the exception of minor differences, the same effect as an increase of venous inflow in the open circuit heart lung preparation.

BRITISH JOURNAL OF CHILDREN'S DISEASES. Vol. XXII. July–September.—In his paper on Scarlet Fever, with Special Reference to Susceptibility as Determined by the Dick Intracutaneous Test, which forms his M.D. thesis for the Queen's University, Belfast, Dr. W. A. Brown records his observations on 487 cases of the common infectious diseases—namely, scarlet fever, diphtheria, whooping-cough, measles, rubella, and varicella, on which he performed the Dick test. His principal conclusions are as follows: (1) The Dick test is an index of susceptibility and immunity to scarlet fever. (2) It is a valuable aid to diagnosis. A *strongly* positive reaction in the first 48 hours of a scarlatiniform eruption should make one hesitate before forming a diagnosis of scarlet fever. (3) When a patient who has recently shown a positive Dick reaction develops a scarlatiniform attack the reappearance of the red area at the site of the original inoculation confirms the diagnosis of scarlet fever. (4) Age-susceptibility for scarlet fever is highest at the pre-school age, whereas age-incidence is greatest during the first few years of school life. Immunisation, therefore, if adopted as a prophylactic measure in State medicine, should be carried out in the first few years of life. (5) The Dick test confirms the well-recognised fact that an attack of diphtheria increases the patient's susceptibility to scarlet fever. (6) The use of different dilutions of toxin may show widely divergent results. The use of a 1 in 6000 dilution seems to underestimate the susceptibility, while the use of a 1 in 1000 dilution tends to overstate the incidence.—Dr. Vincent Coates contributes a paper on Lipodystrophia, in which he records two personal cases in boys aged $7\frac{1}{2}$ and $7\frac{3}{4}$ years, with notes on all the previously reported cases arranged in tabular form. He points out that the cause of this curious condition is entirely obscure. With the exception of a case reported by Napoleon Boston no claim has been made of cure or arrest of lipodystrophia.—Dr. Norah H. Schuster records a case of cerebral degeneration in an infant, in which the symptoms closely resembled those of a case reported by Paterson and Carmichael in 1924, owing to the onset of anorexia, amentia, and muscular weakness at an early age, a rapidly fatal issue and amaurosis. Pathologically the essential lesion was the same in all three cases—namely, a degeneration chiefly localised in the basal ganglia, combined with excessive production of blood-vessels and neuroglia. Wilson's disease could be excluded, as there was no cirrhosis of the liver. Dr. Schuster attributes the condition to a toxæmia of unknown origin, with no evidence of bacterial infection.—Dr. W. M. Feldman reports two cases of Occlusion of Bile-Ducts in Infants, whose ages were 8 weeks and 10 weeks respectively. He maintains that if surgical measures were adopted immediately the jaundice manifests itself they might be successful.—Dr. Angelica Panayotatou, of Alexandria, records a case of Ascaridiasis with Benign Jaundice in a boy of 8 years. The ova of *Ascaris lumbricoides* were found in the stools, and under treatment by santonin and calomel pills, followed by castor oil the next morning ten round worms were passed, and rapid recovery took place. The writer urges that in Eastern countries, especially those in which intestinal parasites are so frequent, the possibility of their presence should be considered in all illnesses of the intestinal canal.—The abstracts from current literature are devoted to ophthalmology.

Reports and Analytical Records.

(1) CHOCOLATE "IODOSTARIN"; (2) ALLONAL.

(HOFFMANN-LA ROCHE CHEMICAL WORKS, LTD., 7–8, IDOL-LANE, E.C. 3.)

(1) Chocolate Iodostarin is a preparation for the administration of iodine in the prophylaxis of goitre. The chocolate tablets in which the drug is contained are sold in boxes of 50 which, on experience gained in Switzerland and the United States, appears to be a sufficient quantity for prophylactic employment in the case of a child or young person for a period of six months. Each tablet contains the equivalent of 5 mg. of iodine, and it is necessary to note the distinction between this preparation and ordinary iodine tablets which are employed in syphilitic affections.

(2) Allonal was reported upon in THE LANCET early last year. The full name of this preparation showing its composition is allyl-isopropyl-barbituric acid with phenyl-dimethyl-amino-pyrazolon. It is an hypnotic and analgesic which can be employed in substitution for morphine as it seems to have no habit-forming propensities. Numerous clinical reports have been published in the American medical press but the drug is still new to the English market, for which reason it may be serviceable to recall its characteristics. American experience goes to support the claims of the manufacturers that it is a remedy of real value for controlling insomnia and pain. As the preparation contains a derivative of barbituric acid it comes within the scope of the Poisons Schedule and is only supplied to registered practitioners and pharmacists. Recent evidence has been sent to us of the particular value of Allonal in certain cases as an hypnotic, for American physicians have put it to practical use in the breaking of drug addictions such as morphinism and alcoholism, although they allow that it is too early to speak dogmatically. Certainly further experience here would be worth recording, and there seems to be an opening for some extended inquiry under controlled circumstances.

(1) DIBROMIN; (2) SILVER NITRATE SOLUTION CAPSULES; (3) STORAXOL; (4) OLGAR.

(PARKE, DAVIS AND CO., BEAK-STREET, LONDON, W. 1, AND DETROIT, MICHIGAN, U.S.A.)

(1) Dibromin is a crystalline synthetic compound containing approximately 56 per cent. of bromine in loose combination. When its solutions are brought into contact with infected tissues the bromine is slowly liberated and exerts a powerful germicidal action. It is stable in the dry state and solutions are easily made of definite strength; these do not stain or irritate and are practically non-toxic. Dilute aqueous solutions, ranging in strength from 1 in 10,000 to 1 in 2500, may be applied by continuous irrigation in the treatment of extensive wounds or ulcerations, and for infections of the urethra, bladder, or uterus. Weak solutions are suitable for use as mouth washes and as collyria in eye infections. The preparation is supplied in 6 gr. capsules (in bottles of 10 or 50 capsules) for convenience in making solutions without weighing—the contents of one capsule added to 7 pints of water forms a 1 in 10,000 solution.

(2) Silver nitrate solution capsules provide in aseptic condition the 1 per cent. solution of nitrate of silver for application to the eyes of infants at birth. They are formed of a special wax, and each contains about 5 ℥ of the solution, which is easily expelled by pressing the capsule between thumb and finger after an aperture has been made with a sterile needle. Two of these capsules are supplied in a tin together with a puncturing needle and directions for use.

(3) Storaxol is a combination of storax, resorcin, menthol, camphor, carbolic acid (5 per cent.), and precipitated sulphur in an emollient base. As the ointment is penetrative it forms a good parasiticide. Its antipruritic, antiseptic, and analgesic properties indicate its use in chronic eczema, ringworm, pruritus, urticaria, impetigo, psoriasis, scabies, and parasitic affections of the scalp. It can be employed as a serviceable dressing for foul ulcers and in the itching of piles. It is supplied in convenient collapsible tubes, also in jars containing 1, 5, or 10 pounds.

(4) Olgar consists of highly purified liquid paraffin emulsified with agar. It has the appearance and consistence of thick cream and is agreeably flavoured. The paraffin is rigorously tested to ensure freedom from injurious by-products. The administration of Olgar is indicated in cases of chronic fæcal stasis and the various forms of auto-toxæmia resulting therefrom; in catarrhal conditions of the intestine and hæmorrhoids. Its lubricating and therefore soothing action is purely mechanical; it softens the intestinal contents and facilitates peristalsis. The dose for an adult is one tablespoonful night and morning. It is supplied in 16-ounce bottles.

LACTOBYL.

(J. LEGRAND, 21, RUE THEODORE-DE-BANVILLE, PARIS, 17e; AND THE CONTINENTAL LABORATORIES, LTD., 22D, EBURY-STREET, S.W. 1.)

This preparation is a combination of agar, biliary extract, extract of the intestinal glands, and lactic ferments, and is designed to regulate the biliary and intestinal secretions, replacing the habitual use of purgatives. A physiological theory, set out by the literature, which meets the ætiology of every case of chronic constipation, would have some difficulty of establishment, but the value of agar on intestinal residues is well known, while promotion of a flow of bile is the object of all preparations similar to lactobyl, and there is evidence that that object is achieved. It is supplied in tablets in which the dosage is calculated so that one to six tablets can be taken without causing any colic. The treatment should be commenced with one or two tablets, the dose being increased or diminished according to the results.

New Inventions.

MODIFICATION OF DE RIBES'S BAG.

THE illustration shows a modification of De Ribes's bag which I have suggested. By a special device the broad end of the bag, when filled, is concave, so that it does not displace the fœtal head. The pressure also is evenly distributed outwards against the inner side of the cervix, thus producing more speedy dilatation. The object of this, like any other form of De Ribes's bag, is to play the part of the membranes

in those cases where the membranes rupture early in labour. The bag, when folded, can be introduced into the uterus when the cervix is the size of a shilling by means of long ovum forceps. It is pear-shaped, 2¼ in. in diameter at the broad end, and 4 in. long, and it is made of rubber of medium thickness. When the bag has been introduced a Higginson's syringe is fitted to the tap and the bag partially filled with water. The bag remains in position until the cervix is fully dilated.

The bag can be obtained from Messrs. Allen and Hanburys, Ltd., 48, Wigmore-street, W.

J. E. HEPPER, M.R.C.S. Eng., L.R.C.P. Lond.,
Late Major, R.A.M.C.

THE LANCET.

LONDON: SATURDAY, OCTOBER 3, 1925.

YESTERDAY, TO-DAY, AND TO-MORROW.

WE publish to-day three of the introductory addresses delivered this week at the opening of the winter session of the Metropolitan medical schools, when Prof. E. A. GARDNER introduced his audience at Westminster Hospital to the very beginnings of medical art in ancient Greece, while Major J. H. BEITH spoke to the students at Guy's Hospital on the necessity of cultivating in professional life sympathy with the personal attributes of the sick subject. Major BEITH, it will be seen, draws his humorous and pointed illustrations from the working of a Rolls-Royce car, while Prof. GARDNER lays stress on the influence of the mind over the body as evidenced in the days when not to believe in magical manifestations would have been a confession of ignorance, and the two addresses between them illustrate the practice of medicine as carried on in conformity with accepted knowledge throughout a period of over 2000 years, during which time we cannot fail to see that human nature has remained much the same thing, and that the part played by medicine has shown a similar applicability to circumstances. The more intimate that the doctor's comprehension is of the patient's mental make-up, the more successful will be his choice and application of remedies for his physical ills. So it was in the yesterday of ancient Greece, so it is to-day in our hospital and private practice, and so it will be in any of those great developments of to-morrow, in which the progressive nature of our science and art warrants belief.

Prof. GARDNER in his disquisition on the cures of ÆSCULAPIUS surveys common ground upon which the students of archæology and medicine meet, and it is archæology which has revealed to medicine the sources of the wisdom of HIPPOCRATES, the Father of our calling. The ancient Greek records, notably those at Epidaurus, though compiled apparently at one date, were based upon votive offerings received over a long series of years, and the traditional wisdom thus placed at the disposal of HIPPOCRATES led to the compilation of the first great medical system. In this the practice of medicine was for the first time based upon the principles of inductive philosophy, and while the knowledge of anatomy, of physiology, and, therefore, of pathology was defective, the observations on the natural history of disease were masterly. He was evidently able to sift the wheat from the chaff in the votive offerings, as well as in the many contributions from all sorts of sources, authoritative and other, which must have gone to the compilation of the numerous treatises. The story was carried on, as all know, by the development of medicine in Greece, the rise of the Alexandrian school, and the teachings of CELSUS and especially of GALEN, and when after the dark ages the classical literature was brought to light, all that stood the proof of clinical trial remained as the structure upon which have been erected the immense developments of the scientific medicine of to-day. Here fundamental discoveries have worked veritable revolutions in conception as in practice, but the mind of man in relation to his body remains substantially unaltered. We are reminded by Prof. GARDNER that Sir CLIFFORD ALLBUTT estimated that in the Æsculapian centres by pomp, splendour, and enchantments the senses of the patients were captured and the springs of nervous energy unsealed. The same thing happens to-day; and while the mass display of the power of suggestion, that can be seen at Lourdes, is in many respects a return to the methods at Epidaurus as described by Prof. GARDNER, the need for estimating the relations between the physical and mental qualities of the patient is to-day recognised by every medical practitioner as of paramount importance. The eulogy of Sir CLIFFORD ALLBUTT which Sir ARTHUR KEITH gives in the third address which we publish suggests the ideal fusion of the man and the student which makes the physician. His plea for disciplined minds is appropriate, and a sense of proportion is stimulated by his statement that 20,000 years ago European man was as well equipped in size and form of brain as he is to-day.

Major BEITH'S address, though deliberately cast in a light and humorous mould, conveys a similar serious message—a message foreshadowed in its title, for his thesis is that, while no force or attractiveness of personality can compensate the doctor for ignorance, yet, unless the doctor's personality be sympathetic he will be deprived of an invaluable adjuvant to his labours. Major BEITH'S counsel to medical students that, if they want to get on in the world quickly, they must advertise, would have been dangerous in its implications if he had not immediately qualified his words by making hay of the methods employed in the specialised world of advertising, while his comments on the art of handling patients conceal real shrewdness under a humorous cloak. And his closing words, when applied to the responsibilities which lie upon the shoulders of the medical practitioner, will find general endorsement.

EXPERIMENTAL EPIDEMIOLOGY.

IN pre-bacteriological days epidemics were things of themselves, with origins, structures, and natural histories characteristic of each variety in the same way that each kind of animal and plant has a specific anatomy and specific habits and relationships to the rest of the world. With the recognition of parasites, epidemics were, as it were, materialised into reactions between the host on the one hand and the bacillus or protozoon on the other; the "cause" of an epidemic of a disease became the parasite which was related to that disease. Writers like HIRSCH and CREIGHTON were looked on as curious out-of-date mystics, and Sir WILLIAM HAMER'S gentle raillery failed to convince as many bacteriologists as it should that they had no real explanation of the natural phenomena in their talk of cultures and immunity. Experience has shown, as it has so often done before, that the flood of the new knowledge of parasites did not of itself explain all that its devotees expected and by implication claimed, and as more accurate experience of the facts of epidemics has accumulated it has become clear that the older point of view really needed attention. That the older epidemiology is really discrepant with parasitology is unthinkable if it is assumed that parasites are a necessary factor in the causation of the diseases concerned; it is evident, however, that much more knowledge is required before the two lines of thought

and explanation can be brought into harmony. Observation has its limits of usefulness in unravelling such problems; there is, indeed, little hope of success unless the questions can be dissected and simplified by experiment. The recent progress of experimental epidemiology, associated chiefly with the work of Prof. W. W. C. TOPLEY in this country and of Dr. L. T. WEBSTER in America, is, therefore, to be heartily welcomed and their work deserves close study. In the latest instalment[1] of the Manchester work the careful experiments made by Prof. TOPLEY are analysed and discussed by Dr. M. GREENWOOD as if they were the returns of a medical officer of health, and their joint paper makes an exceptionally readable and interesting document. The particular infection examined is the pasteurellosis of the mouse, and the particular problem here dealt with is the effect of adding normal animals to an infected population. It had previously been shown that if an epidemic is started in a mouse community it spreads through it and then dies away, leaving a certain number of survivors, and that if at this stage a number of normal animals are added to the community the epidemic blazes up again and involves not only the fresh mice but also the survivors of the first outbreak. In the present experiments fresh normal animals were added at various intervals of a few days, and in this way an epidemic was maintained for more than three years. The mortality was not regular but in waves, usually of a length of about three weeks, though sometimes three times as long, and the course of the mortality varied with the number of fresh mice coming into the population and the rate at which they came in. The outstanding fact, as the authors point out, is the encouragement of an epidemic in a community by the immigration of non-infected individuals. It has generally been assumed that the admission of normal animals to an infected herd is not dangerous to that herd (though it is, of course, dangerous to the normals coming in). This is shown to be unsound. The explanation remains to be worked out. At present one can assume only that in the decline of an epidemic some sort of balance is reached between the parasites and the hosts such that the parasites can do no further harm unless they can get into some normal non-immune individuals in whom they can breed up a race which is capable of attacking the resistant residue of the epidemics. These are questions at the very fundamentals of epidemiology, and we may look to the experimental method to help substantially towards their solution. Meanwhile we may reflect on the wisdom of the ancients who knew that the best thing to do with an epidemic was to shut it up and have nothing to do with it. We now know that they were thinking of others as well as of themselves.

SCARLATINAL OTITIS.

Mr. T. B. LAYTON'S report[2] to the Metropolitan Asylums Board on ear disease in scarlet fever is a continuation of that sent in by him in July, 1921, as a result of one year's work, and the present report deals with the 13 months from September, 1923, to September, 1924, inclusive. In that period 290 scarlet fever patients suffered from suppurative disease of the middle ear, a percentage of 8·61; the incidence in scarlet fever of simple type was 7·13, and in septic scarlet fever 24 per cent.; the statistical tables also show that otitis is more frequent, and recovers less rapidly, in the first quinquennium than at a later age. Mr. LAYTON refrains from giving an opinion as to the potential infectivity of the ear discharge, and refers to the awkward position which might occur if a mastoid operation were advised at a fever hospital, because the discharge is a danger to others, rather than for the welfare of the patient. The conclusions at which he arrives in regard to treatment are not always in accordance with the practice accepted in general otological work; but it must be remembered that the management of scarlatinal otitis, especially in institutional treatment, differs from that of otorrhœa in general practice.

Paracentesis of the drum was only performed 26 times out of a total of 379 ears in which discharge occurred; this low figure is partly due to the absence of symptoms, for pain is far less frequent than in ordinary otitis, and routine inspection of the ears in the absence of symptoms is hardly practicable in large institutions; but chiefly is it due to the short period that elapses between bulging and rupture. In fact, the difficulty is to ensure the operation being carried out in time under the conditions which regulate its performance in the Board's infectious hospitals, the time necessary to obtain the consent of the parent being, in many cases, responsible for the delay. This is an administrative difficulty which would not occur in private practice and might perhaps be obviated by an alteration in the regulations; in any case, it does not detract from the value of the operation, when it can be performed, a value of which Mr. LAYTON is firmly convinced, though this is the one point on which his Board do not agree with him. A remarkable point is Mr. LAYTON'S tribute to the value of Wilde's incision; this operation was performed 16 times; eight cases left the hospitals without any further operative treatment and with dry ears. Of these Mr. LAYTON says that "under any other plan all these children would have been submitted to the complete mastoid operation"; this remark is inaccurate, as by the "complete" is usually meant the "radical" mastoid operation, but presumably he means antrotomy, and his statement that "they would not have shown a better result" is justified. Of these eight cases one was aged 6 and one aged 5; none of the others was over 3 years old. But the other eight cases, of whom five were under 4 years of age, were later submitted to a mastoid operation; of these, one died from septicæmia and two left hospital with active disease still present. This result must be considered good; if 50 per cent. of acute otitis with retro-auricular swelling in young children can be got well with Wilde's incision, it is possible that as good results might be obtained in non-scarlatinal cases, at any rate under the age of 4 years. Surprisingly poor results are shown by antrotomy performed for ear discharge only; of six cases the first alone was a complete success; the second, operated on two months after onset, remained with a moist perforation; and the third, operated on after three months, with a discharging ear; the other three are catalogued as failures, but the date of operation is not mentioned. This is in marked contrast to the results obtained in ordinary otological practice, where operation after two or three weeks is usually successful; the date of operation is only given in these two cases, but it is possible that better results would have been obtained if they had been operated on sooner. Mr. LAYTON'S opinion is that those cases do badly which show no signs of disease in the mastoid at operation, that it is impossible to distinguish by ordinary examination which cases have disease in the mastoid, and that an X ray examination is likely

[1] Journal of Hygiene, 1925, xxv., 45.
[2] M.A.B. Annual Report. 1924–25. Pp. 187–217.

to be helpful in this respect. Accordingly he has recommended to the Board that an X ray apparatus be installed at one of the fever hospitals for examination of the mastoids of these cases, and this the Board has agreed to do at the North-Eastern Hospital.

An important problem is presented by the cases discharged with active otorrhœa; there were 35 of these, of whom 17 had discharge before contracting scarlet fever. Of the remaining 18 cases, 11 had either septic scarlet fever or a mixed infection, leaving seven only of the ordinary type of scarlet fever. Surely no better tribute to the excellence of the management of these three hospitals could be desired than that only seven cases contracted an uncured scarlatinal otitis in the 13 months under review. But it is naturally desired to reduce the number still further; recognising that scarlet fever leaves the patient with a resistance profoundly lowered to the ordinary organisms of suppuration, Mr. LAYTON believes that heliotherapy should be employed, and the Board has adopted his suggestion, and proposes to set apart a ward of 12 to 20 beds for experimental sunlight treatment with an ultra-violet apparatus for use on dull days and during the winter months. Needless to say, the result of the treatment of pyogenic infections, in cases of lowered resistance, by this method will be watched by those interested in many different departments of medicine and surgery.

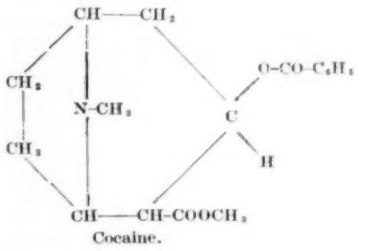
Annotations.

"Ne quid nimis."

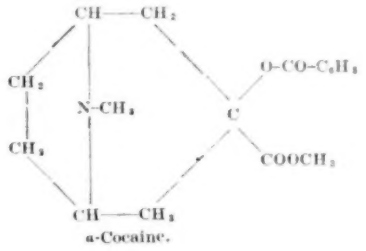
LOCAL ANÆSTHETICS AND CHEMICAL CONSTITUTION.

LOCAL anæsthetic substances have hitherto usually been employed in the form of hydrochlorides which have a definite acid reaction and are largely ionised in solution. Such solutions are fairly satisfactory in producing local anæsthesia when injected, particularly in conjunction with adrenalin, but they have little surface anæsthetic action, and on this account have not proved satisfactory substitutes for cocaine in ophthalmic surgery. For this surface action the free base appears to be far superior to the ion, and substances which undergo hydrolytic dissociation are greatly to be preferred to those undergoing electrolytic dissociation. Salts formed by combination of the base with weak acids when dissolved in water undergo very little ionic dissociation and much hydrolytic dissociation, and hence show the strong surface anæsthetic action of the base itself. At the time of the Bath meeting of the British Medical Association Dr. A. J. Copeland communicated [1] the results of experiments and tests, made by him as Ernest Hart Memorial Scholar, with the borates of these local anæsthetic bases. The work, which was carried out in conjunction with Mr. H. E. F. Notton, B.Sc., at the laboratories of pharmacology and chemistry of the University of Cambridge, is now set out at length in the *British Medical Journal* for Sept. 26th. The borates show the desired surface action in a high degree, and the local anæsthetic action of a large number of them has been measured on the cornea of the rabbit. In this way several of these borates were found to have a surface anæsthetic action equal to, and in some cases greater than, that of cocaine hydrochloride. Owing to the satisfactory results obtained with the borate of "ethocaine" (of which novocaine is the hydrochloride), special attention was paid to this substance. Not only has it a stronger surface anæsthetic action than most of the borates tested, but it also has the advantage of greater stability. It acts rapidly, both as a surface and a hypodermic anæsthetic, its surface action being more powerful than that of cocaine hydrochloride in solutions of equivalent concentration. It is practically free from any toxic action, and is non-irritant. Its solutions keep well and do not precipitate in contact with the tissues and body fluids. It is, as would be expected from the salt of a moderately strong base with a very weak acid, slightly alkaline in solution, the alkalinity of the solutions of the strength used being equivalent to pH 8. This substance, ethocaine borate, is now manufactured by the British Drug Houses, Ltd., and is available for clinical use under the name "borocaine." For convenience it is supplied in tablets together with a small quantity of adrenalin and sufficient sodium chloride and pure glucose to make an isotonic solution when dissolved in the prescribed quantity of sterile water to make a 2 per cent. solution, this being the usual strength for producing surface anæsthesia. Of the other borates that of β-eucaine is the most noteworthy, as it has the highest surface anæsthetic power of all. Further information concerning this interesting and possibly very valuable substance will be welcomed.

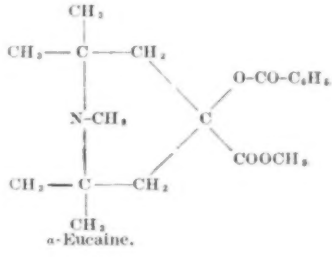
The local anæsthetics form a very interesting group from the point of view of the relation between chemical constitution and physiological action. Although the first substance to be widely used as a substitute for cocaine itself, α-eucaine has a structure somewhat resembling that of cocaine, it was soon replaced by β-eucaine, which has a structure less like that of cocaine, and subsequent developments were concerned entirely with substances, such as anæsthesine, novocaine, butyn, stovaine, tutocaine, &c., which have very little resemblance at all to cocaine from the standpoint of chemical structure. It is very curious in this connexion to note that α-cocaine resembles cocaine itself in structure far more closely than does α-eucaine, but differs from these in being quite devoid of local anæsthetic action. The more recent local anæsthetics of the ethanol, propanol, and butanol series, such as novocaine, butyn, and tutocaine, are of simpler chemical structure than cocaine, though closely related to one another, as can be seen from the structural formulæ of many of these compounds given by Mr. E. Watson-Williams in a recent account [2] of the pharmacology of tutocaine.



Cocaine.



α-Cocaine.



α-Eucaine.

[1] THE LANCET, 1925, ii., 196.

[2] THE LANCET, 1925, i., 914.

EMBRYONIC DIFFERENTIATION.

THE old doctrine of preformation held that the organism was present in the germ-cell, only requiring growth and slight alteration of its parts to attain to its proper state. When it became evident that, to account for successive generations, this belief entailed the assumption that these miniature forms were contained within one another ad infinitum like Chinese boxes, the doctrine naturally fell into disfavour. It was succeeded by Wolff's theory of epigenesis, which postulated a real development or evolution from unformed matter; in its essentials correct, as a description of what takes place, founded on observed facts, but not, of course, an explanation of development. To-day we hold, in some sense, the two conceptions. We know enough of the detail of formation of an organism to recognise its epigenetic development, and at the same time we are driven to admit a more subtle form of preformation in the shape of predetermination: the organism is not there in an excessively minute but practically perfect shape, but potentially, in a form which can only reach its specific end by the long succession of epigenetic stages through which it will pass. These are basic ideas which have been and are being consolidated, while the battle has gone ahead into other regions, and concerns itself with things which were not within the horizon of the older fighters.

Embryonic development, however, is not only the expression of a prefixed potentiality showing through a series of morphological changes, but is also under the influence of interactions between these and the environment. Experiment can give us some apparently simple examples of the play of these forces. In some of the lower forms the outgrowing optic vesicle has been transplanted under the ectoderm of another part of the body, with the result that a lens has been formed in this new situation from the outer layer; evidently the power of lens formation is not a specific possession of the ordinary lens area of the ectoderm, and the power is called into action by the contiguity of the optic vesicle—i.e., by the environment. On the other hand, the optic vesicle deprived of its lens covering still invaginates to form the optic cup, thus showing that this power is inherent in it, and does not depend on the presence of the lens which, normally, occupies the hollow of the cup. Other examples of the effect of environment in the wider sense are to be seen in the well-known experiments in which the results on developing eggs of the addition of, e.g., certain salts to the surrounding media have been recorded. There is evidently predetermination, but there is also evidently in some cases a wide potentiality of development. Experiments on some of the lower animal forms have shown equipotentiality for the earlier stages of embryonic development, but other forms demonstrate, as certainly, early predetermination of parts, and in some cases, as in Driesch's experiments on the blastula of the sea-urchin, it would seem to be suggested that the localisation of special powers in one part means its removal from the rest. The cells of this blastula are at first equipotential, but, as soon as those at one pole have budded off the mesenchyme cells, they alone have the power to form the gut invagination; they cannot reform into a blastula, and the remaining cells, though they can reform into a blastulā, cannot invaginate to make the gut-cavity. There has been, evidently, a rearrangement of the substances within the cells forming the blastula, and specialisation has replaced apparent non-specialisation. When such cases are considered, it is not surprising that two seemingly opposed views should be held about the nature of the developing organism. One maintains that this is fundamentally equipotential in all its parts, depending on the formative stimuli of circumstances for the result, as in the case of the lens rudiment mentioned above; the other postulates a mosaic-like arrangement of organ rudiments present from the beginning in the ovum and undergoing expansion and evolution in the processes of further development, such, indeed, having been shown to exist in certain eggs. It seems not impossible that the future will reconcile these two views and establish a via media for general purposes.

In the meantime evidence accumulates on one or other side, and among the latest contributions to the question in England is the short but very interesting account by Dr. P. D. F. Murray and Dr. J. S. Huxley, of Oxford,[1] of the self-differentiation in an experimental graft. A small basal piece of the posterior limb-bud from a four-day chick was grafted on to the chorioallantoic membrane of a seven-day incubated egg. It was removed and examined after five days. It showed a normal and well-formed femur, ossifying, with a cartilaginous patella and a small piece of pelvic cartilage, and no sign whatever of any attempt to form the distal portion of the limb. This, as the authors point out, is against the conception of equipotentiality of the tissues of the four-day limb-bud, although its structure at that time is microscopically undifferentiated. There is reason to suppose there has been regeneration of the femur in part, so that the authors suggest that it is the region that is predetermined. It would seem to follow that, within the area of the "regional mosaic," there is some amount of pluripotentiality present in the bud. In a postscript Dr. Murray and Dr. Huxley refer to more recent work by P. Weiss, who has shown that, in the newt, each segment of the limb-skeleton is totipotential as regards its own regulation, but the limb-skeleton as a whole is a mosaic of regions with different potentialities. The contribution gives a good mental picture of the uncovering of potentialities one after the other, and foreshadows a time when two conflicting views will be found to harmonise.

EXTENDED SPA TREATMENT.

IT is only by studying the figures showing the total invalidity for which insurance benefit under the National Health Insurance Act is paid that the prevalence of rheumatism amongst insured persons is really appreciated. The Special Committee investigating the incidence of rheumatism, whose report (No. 23) was published in March, 1924, found that nearly one-sixth of the total benefit paid was due to diseases classed as "rheumatic," the actual cost in 1922 being estimated at £1,000,000. Of these cases half were due to various forms of chronic arthritis. It is no wonder that the approved societies pressed for a special inquiry into the causation of rheumatism amongst the insured workers. In certain occupations the crippling forms of arthritis are more prevalent, but even there the insistence on and facilities for personal hygiene have led to some measure of control. The ætiology of these conditions will not be understood until the nature of the infection is determined, but the recent investigation clearly showed a close association with a septic focus which in so many cases is only too obvious. The proper care of the teeth and the thorough provision of dental benefit should have a great effect in reducing the incidence of these diseases, and the provision of the services of a bacteriologist and a laboratory accessible to insured persons will be a further step in the same direction. Recently the demand for spa treatment for insured persons has grown in volume, as at present it is only through charitable help that such persons can be sent to any of the treatment centres. Unfortunately, however, if assistance could be given to all the suitable cases it is certain that the present available accommodation would be quite inadequate. The special hospitals at Bath, Buxton, and Harrogate can only deal with 5000 patients each year, while statistics show that something like 370,000 insured persons seek advice for some form or other of "rheumatics" annually. Dr. Matthew B. Ray, the secretary to the British Subcommittee on Rheumatism (International Society of Medical Hydrology), has suggested that much of the treatment might be given in the workers' homes; it is not easy to instal vapour

[1] Journal of Anatomy, July, 1925.

baths in an artisan's cottage, yet there is no reason why a special department should not be installed in the municipal baths. Turkish baths are, in fact, provided by certain local authorities. Sir George Newman, in his report for the year 1924, has given an admirable summary of the case for the immediate provision of treatment centres. He points out that at the present time these cases, which are not admitted into general hospitals because of their chronic nature, arrive eventually in the Poor-law infirmaries, where facilities for investigation and treatment are not adequately provided. The work of research and investigation should be undertaken at a much earlier stage in the disease, and this is only possible if cases are admitted to specially equipped institutions as soon as they are incapacitated. "Essential for research," writes Sir George Newman, "is an institution where enough cases can be concentrated in conditions to make it possible to employ a team of medical officers, where treatment and observation are systematised and represent continuous investigation." This is a great ideal, both for the medical profession and the country, an ideal which, in view of the issue at stake, should become a practical creed.

PROTEIN SHOCK THERAPY FOR FIBROSITIS.

A FEW years ago Dr. W. Ponndorf, of the Inoculation Institute of Weimar, set forth the claims of cutaneous inoculation of vaccines by scarification in the treatment of the "mixed infections" of tuberculosis, under which term he included almost every infectious disease to which man is prone. He prepared two vaccines: "A," which was used for pure tuberculosis, consisted of concentrated Koch's Old Tuberculin with the addition of an empirically determined amount of human and bovine autolysed tubercle bacilli; "B," for the mixed infections, was similar to "A," plus the endotoxins of streptococci, staphylococci, pneumococci, and influenza bacilli. Inspired by the effect which Ponndorf's vaccines seemed to have on rheumatic conditions, Dr. Gustav Paul, director of the State Inoculation Institute of Vienna, began some four years ago to test the clinical value of that method of treatment, and in a recent issue of the *Wiener Klinische Wochenschrift* (Sept. 3rd, p. 984) he records his results in nearly 600 cases of rheumatism where he administered vaccine by scarification.

The ætiology and history of Dr. Paul's enthusiasm for the treatment is not without interest. The story, as he himself tells it, is as follows. Although he had been familiar with Ponndorf's theories for many years, he had never tested them in practice owing to lack of suitable material. As a result of a visit to Weimar in 1921, however, he was so impressed with the possibilities of Ponndorf's claims that he obtained facilities to carry out this method of inoculation in the sanatorium for children suffering from surgical tuberculosis in Grimmstein, Lower Austria. In addition to over 300 cases of tuberculosis of the bones and glands in children, in which the treatment proved satisfactory, Dr. Paul was able to observe what he terms the "amazing" (*verblüffend*) curative powers of the vaccine in some 50 adults, nurses, and officials of the sanatorium, who suffered from rheumatism. In 1923 the Grimmstein sanatorium was closed down, and as Dr. Paul had no private practice of his own wherewith to continue his observations, he feared that further investigation on his part might lapse. Fortune favoured him, however, and the successful treatment of a "lady of quality" in Austria formed the nucleus of a private clinic for ambulatory cases of rheumatism, which up to the present has furnished him with some 600 cases. Dr. Paul does not describe his technique in detail, but indicates that a small area of skin is scarified, without drawing blood, and then the vaccine is applied in a carefully regulated dosage, which depends on the size of the field of inoculation, the number of scarifications, and the amount of the vaccine. The superiority of his method over the more usual methods of protein shock he ascribes to: (1) the happy combination of toxin and bacterial protein; (2) the manner in which they are assimilated; and (3) the correct choice of absorption routes—which should be by the lymphatics. The first application of the vaccine serves to sensitise the patient, and the subsequent allergy and local reaction furnishes a valuable indication in estimating the amount of individual tolerance. The results Dr. Paul has obtained in his completed cases are reproduced in the following table:—

Condition.	Case-incidence.	Cured.	Considerably improved.	Unchanged	Worse.
Arthritis deformans..	35	11	18	4	2
Chronic rheumatoid arthritis..	147	95	48	3	1
Arthritis of shoulder-joint	35	27	7	1	—
Muscular rheumatism	26	19	6	1	—
Sciatica	44	34	9	1	—
Chronic lumbago ..	23	15	8	—	—
Neuralgias	32	19	9	4	—
Total	342	220	105	14	3

He has thus 65 per cent. of cures and 95 per cent. of improvements to record, and in a further series of 257 uncompleted cases improvement already reached 75 per cent. Dr. Paul points out that these high percentages are all the more noteworthy as the majority of cases classified as chronic rheumatoid arthritis represented transition stages towards arthritis deformans, and further, most of these patients had come to him as a last resort, having been previously treated unsuccessfully by every other known therapeutic agent. He attributes the failure of other methods, such as balneo-therapy, drug treatment, and radiation, to the over-energetic and heroic manner in which they are exhibited, quoting Prof. Bier's views on the over-sensitive state of the chronically inflamed tissues which require the smallest possible stimulus to promote the activity of the cell.

Dr. Paul's method, therefore, falls into the category of non-specific protein shock therapy, in which the touchstone is not "quale" but "quantum"; and he regards the effective substitution of some other antigen for Ponndorf's tuberculin as within the bounds of possibility, "for," as he says, "the medical world is somewhat tuberculin-weary." His claims are very large and in view of the official position he holds are hardly likely to pass unnoticed. They should certainly be tested by those who are dissatisfied with their own results in the big group of fibrositic maladies.

PROF. RICHET'S RETIREMENT.

THE retirement of Charles Richet from the chair of physiology in the Paris Faculty of Medicine, after 47 years of devoted teaching and brilliant research, recalls to mind the enormous strides made in his subject during the span of his professional life. Fifty years ago the renaissance of physiology was but just beginning and the young Richet was the pupil of such masters as Berthelot, Marey, Vulpian, and Claude Bernard. The field was ripe to the harvest, and Richet and his contemporaries piled discovery on discovery, and what to them were new facts wrung from Nature by hours of patient research are to us almost banal. The diuretic properties of sugar, for instance, the refractory period of the nervous system, the salt-free diet for epilepsy, the virtues of chloralose, the influence of anæsthesia on respiration—with all these points the name of Prof. Richet is associated, as well as first and foremost with the discovery of anaphylaxis. In his recent farewell

address [1] to the Faculty, the aged professor reviewed the work of the physiological laboratory since 1881 with particular reference to five of his most significant lines of research.

The essential principles of temperature regulation were first explained by Prof. Richet in 1884, an almost accidental result of some experiments on electrically produced pyrexia in dogs. The rapid breathing of the dog in hot sunshine was called by him "polypnœa" in recognition of the fact that it was no laboured panting or "thermal dyspnœa" as older physiologists called it, but an evaporation process whereby the temperature of the animal's body was kept level in extremes of environmental heat, just as the human being is kept cool by evaporation of sweat from the naked surface. A muzzled dog, to whom this protection was forbidden, would die of heat in half an hour. Prof. Richet also demonstrated that two mechanisms regulate this thermal polypnœa, a reflex and a central. The reflex panting or sweating stimulated by simple contact with warm air prevents rise of temperature; when it is inhibited by an anæsthetic, such as chloral, the blood temperature may go as high as 108·5° F. before its heat stimulates the bulbar centres and panting or sweating is initiated centrally so that the temperature falls. The parallel mechanism of shivering to prevent loss of heat from the body was shown to require a temperature of 93° before the central stimulation occurred. The application of these physiological facts to the clinical phenomena of fever has revolutionised our attitude to temperature states. Perhaps most epoch-making of all the work emanating from the Paris laboratory was that on serotherapy, which began with some speculative remarks in a lecture delivered by Prof. Richet in 1883. Commenting on the comparative immunity to anthrax of Algerian sheep and the susceptibility of French breeds, he suggested that injection of Algerian blood might confer immunity on French animals. Some years later the well-known experiments on *Staphylococcus pyosepticus* were carried out, in collaboration with Prof. Héricourt, and in 1888 it was established that the blood of an immunised animal will confer immunity on one that was previously susceptible. Their further researches led them along a road of which the end is not yet in sight—the search for a satisfactory serum for tuberculosis. Their principle has been amply corroborated by contemporary and later workers, who followed the more promising lines of diphtheria and tetanus. A clinical offshoot of the tuberculosis experiments was the discovery of the virtue of raw meat-juice in this disease. Its value is admittedly restricted to early cases, but Prof. Richet claims that the administration of the correct quantities—somewhat large ones—is followed by a gain in weight and strength and an increase of azote and phosphoric acid in the urine. Genetics received a contribution from the researches of Richet and H. Cardot into lactic fermentation, out of which arose the discovery that micro-organisms cultivated in certain media acquire new characteristics and transmit them to their offspring. Anaphylaxis is one of the most unexpected of all physiological phenomena, and the original researches of Prof. Richet and Dr. Paul Portier into this subject arose from an unexpected and piquant direction. It was while accompanying one of the deep-sea expeditions of Prince Albert of Monaco that their experiments with poisonous actinia revealed this phenomenon. To their profound surprise dogs that had recovered from a sublethal dose succumbed in two minutes to a trifling second injection.

Prof. Richet's career is one of which his countrymen and fellow-workers may well feel proud. Like all great discoverers he confesses the debt he owes to happy chance, but he adds, as every worker knows to be true, that that good luck must be the benison of the gods on labour, on faith in science, on enthusiasm for research. It is because he has passionately loved physiology that he has rendered to it and to the world such fruitful service. He passes into retirement full of years and honour, and accompanied by the cordial good wishes of scientists and medical men in every part of the world.

[1] Presse Médicale, July 29th.

THE MEASUREMENT OF ATMOSPHERIC DUST.

THE importance of atmospheric dust as a cause of respiratory disease has long been recognised. Certain forms, such as coal-dust, flour, and dust from grain elevators may be so finely divided as to become highly explosive in suitable concentration; whilst it has long been known that dust plays a part in the condensation of water from the atmosphere to form clouds and fog. These facts make it necessary to have some means of measuring dust, and many have been devised. The well-known method utilised by John Aitken [1] depends on the condensation of water vapour on the suspended particles, by which only the hygroscopic nuclei are taken into account and the rest are neglected. Another principle was brought into service in an instrument devised by Dr. J. S. Owens three or four years ago for the Advisory Committee on Atmospheric Pollution. The air to be examined is caused to impinge at high velocity upon a microscope cover-glass, the jet being ribbon-shaped and the velocity of impact approximately that of sound; the jet is formed by an air-pump of 50 c.cm. capacity, which serves thus to measure the volume, and the reduction in pressure brought about in the jet causes condensation of water upon such particles as have an affinity for it. With their load of water, these impinge upon the cover-glass wetting the point of impact and thus causing all particles which strike the glass to adhere. The air approaches the jet through a chamber with damp walls to assure the presence of sufficient vapour to bring about adhesion of the dust. The record thus obtained is mounted for microscopic examination and counted under a 1/12 in. oil-immersion objective with the aid of a micrometer eye-piece. This instrument takes account of all dust particles, whether hygroscopic or not. In the "konimeter" devised by Sir R. N. Kotze for the Miners' Phthisis Prevention Committee of South Africa (1916) and since used extensively for the examination of silicious mine dust, a round jet of air is caused to strike a glass plate on which vaseline is smeared and the particles which adhere are counted. There are, in fact, many methods and it is hard to estimate their relative efficiency. A bulletin [2] just published by the United States Public Health Service, describes some comparative tests. The efficiency of six different instruments was compared for dust produced artificially from iron, grain, silica, coal, and limestone, and was determined by an ingenious application of the Tyndall beam method. Two jets of air, one of which had passed through the instrument to be tested and one of which had not, were viewed side by side against a black background under brilliant illumination. The dust-laden air was diluted with measured amounts of dust-free air until the two streams matched each other in intensity of reflected light, and the amount of dilution required provided a measure of the efficiency. The instruments tested were the sugar tube, in which air is drawn through a filter of fine sugar, subsequently dissolved, and the trapped impurity separated for weighing, or counted in the solution; the Palmer apparatus in which the air is automatically agitated with water spray in a special glass bulb, the resulting suspension being examined gravimetrically or by microscopical counting; the konimeter above referred to; the paper thimble, a little cup of filter-paper used to filter the dust out of a measured volume of the air for subsequent weighing; and the dust determinator, an instrument in which the air is drawn through a filter-paper disc and the quantity of dust estimated from

[1] Collected Scientific Papers (Cambridge, 1923).

[2] Comparative Tests of Instruments for Determining Atmospheric Dusts. Public Health Bulletin, No. 144, Treasury Department, United States Public Health Service. Washington. 1925.

the variation of resistance to flow as the pores become choked with dust. This last instrument could not be compared with the others, its results being in terms of resistance to air-flow. The sixth instrument, called an impinger tube, consists of a tube entering a small flask of about 500 c.cm. capacity and containing about 200 c.cm. of water. The tube ends in a number of small orifices under the surface of the water, whilst at a distance of a few millimetres from these orifices a plate is fixed against which the jets impinge. The air is caused to flow from these orifices by means of an aspirator. There was a great variation in the results obtained by the different methods. Three selected examples of such variation are given, the figures being in dust particles per cubic centimetre for the same air:—

	Iron dust.	Silica.	Coal.
Sugar tube	3,798	5,791	519
Palmer apparatus ..	7,107	3,310	541
Konimeter	2,269	1,417	1079
Impinger	22,811	11,532	1167

The investigation related mainly to dense dusts such as are liable to cause explosions and was not concerned with the smaller and less concentrated particles found in the open air. The Palmer apparatus was considered useful for insoluble dusts, but its efficiency is stated to be low. The konimeter was found to be impossible to use when the dustiness exceeded 600 to 800 particles per cubic centimetre, and this conclusion is supported by investigations by Dr. Owens, in whose experience the use of an adhesive in such instruments makes high efficiency impossible. Impact methods require a very high velocity jet, and if an adhesive is used it is blown away from the point of impact.

THE VALUE OF LUMINAL.

THE number and diversity of the measures that have been advocated in the treatment of epilepsy are a pretty good indication of their ineffectiveness. Psycho-analysis is now ranged with cerebral surgery as of value only in a small group of cases. Good general hygiene and appropriate environment are of great importance but often difficult of attainment. Most practitioners, faced with cases of epilepsy, are chiefly interested in the control of the seizures by medicines. Have any of the new remedies established themselves sufficiently to be worth a trial? Or does bromine, in one form or another, hold the field to the exclusion of everything else? The answer is not a simple one. The good old remedies, borax and belladonna, still have their place. Borax would appear to lessen the number of fits, but rarely to arrest them; while belladonna may give brilliant results in a special group of cases. Peptone therapy, endocrines of various sorts, colloidal palladium are on their trial; it looks as if the verdict is not to be favourable. But in luminal we seem to possess a valuable weapon. In Germany, America, France, and this country much has been published about its use in epilepsy. The evidence is considerable, but more should be made available. For this reason we welcome the publication by the Metropolitan Asylums Board of the collected experience of its use in four of their institutions, the drug having been given for periods of three months and upwards, in doses of from 1–4 gr. daily, to nearly 200 patients.[1] The results, like those of other observers, have been diverse, but a study of the fit-incidence leaves no doubt that the drug is well worthy of a trial. Nor is its benefit confined to fit-reduction; improvement in the associated mental state is also noted in many cases. It must be remembered that all, or nearly all, of the patients in this series were certified mental defectives, and it is probable that the recorded results on a similar number of what may be called normal epileptics would be a good deal more encouraging. The answer to the question as to which cases are likely to benefit by luminal is not yet forthcoming. There is a general consensus of opinion that it is most useful when the fits are of the major type and where the disease has only shown itself recently. Dr. O. G. Misquith's experience (see p. 728) is typical in this respect. But much the same is true of bromide or any other drug that reduces fit-incidence. Certain general observations may now be made about the use of luminal. It is of no value in hysterical fits. In cases of epilepsy, tolerance is apt to occur, so that the results in the first three months of luminal treatment may be the best. An alarming increase of fits may occur on withdrawal of the drug which should therefore be gradually effected and carefully watched. Where luminal arrests the fits, especially in children, there may be a change in mental character; irritability has often been noticed, sometimes of a high degree. Even with small doses, rather formidable morbilliform or scarlatiniform rashes have occasionally appeared. Other toxic symptoms do not occur, unless the dose given be larger than that mentioned. But above this, as Dr. S. Grossman pointed out last week, stupor and restlessness may soon be the result. Outside a resident institution the practitioner will be well advised to make 3-4 gr. the maximum for 24 hours, and not be tempted to increase it if this amount seems to lose its effect. The alarming result of giving (inadvertently) 10 gr. daily for 12 days was set out by Dr. Hildred Carlill in an interesting clinical note a fortnight ago.

[1] M.A.B. Annual Report, 1924–25, pp. 253 et seq.

ACTIVE IMMUNISATION AGAINST DIPHTHERIA.

LAST autumn our Vienna correspondent described [1] an outbreak of diphtheria in a home for infants and young children at Baden, near Vienna, where as a precautionary measure active immunisation was carried out with a 20 per cent. toxin-antitoxin mixture in about 40 children. Six of these children promptly died with typical local and general symptoms of diphtheritic intoxication, and several others showed areas of skin necrosis of various sizes. The mixture had been tested before being issued on guinea-pigs and had been found non-toxic, and the suggestion offered for its subsequent toxicity was that a dissociation of the toxin and antitoxin had taken place. The cause of this dissociation was not forthcoming. There did not appear, however, to have been any question of accidental freezing of the mixture as in the cases reported in Massachusetts earlier in the same year.[2] Under the circumstances the Austrian Ministry of Health referred the matter to Prof. Pirquet for further inquiry, and in a recent article [3] Dr. E. Helmreich, assistant to Prof. Pirquet, discusses the present position in Austria of active immunisation against diphtheria. During the last 15 years diphtheria in Austria has, it appears, assumed so mild a form that no energetic measures have been taken for dealing with it. Prof. Pirquet himself maintains that the immunity conferred by toxin-antitoxin lasts at most a few years and certainly does not persist throughout life. He is therefore in favour of continuing the method of immunisation which has been practised in the Vienna University Children's Clinic for the last few years in lieu of toxin-antitoxin—viz., careful clinical examination of children exposed to diphtheria, immediate injection with antitoxin of those presenting symptoms suggestive of diphtheria, and Schick testing the rest. Those who gave a negative reaction required no further attention, while those with a positive reaction received 500 units of antitoxin. Should a severe epidemic occur, or new facts be brought to light showing that an absolutely harmless toxin-antitoxin mixture could be supplied, the matter might be reopened. In the meantime he proposed that active immunisation against diphtheria

[1] THE LANCET, 1924, ii., 1079, 1086.
[2] Journal of the American Medical Association, 1924, lxxiii., 16, 5–9.
[3] Klinische Wochenschrift, August 27th.

by toxin-antitoxin should be discontinued. Prof. Pirquet's proposal was adopted by the Austrian Ministry of Health, and the performance of active immunisation is now forbidden in Austria. Unfortunately we are still in the dark as to origin of the Vienna tragedy, which has had no parallel in other countries where the use of toxin-antitoxin mixture as a prophylactic is on the increase. We hope that the Austrian authorities will insist on tracing the accident to its source with a view to its avoidance in future rather than simply prohibit one of the most promising avenues of preventive medicine.

WHAT CONSTITUTES A CURE IN PSYCHOTHERAPY?

THERE is an urgent need for some definite standard of "cure" in psychotherapy, if this form of treatment is to take its place with the established therapeutic procedures. Psychotherapists are divided into several schools and the symptoms grouped under the vague term "neurosis" are very elusive, so that the criterion of cure is much more difficult to determine than in organic disease. Dr. Otto Veraguth has collected [1] definitions of cure from a number of leading psychotherapists. Freud says briefly, "a cure is the restoration of productive ability and the capacity for enjoyment." Stekel defines it as, "the conquest by the neurotic of his tendency to isolation, a regained capacity for work and sexual activity, and abandonment of phantasy in favour of reality." Jung claims that his method produces "a maturity of character, due to conscious understanding and assimilation of the undeveloped parts of the personality enabling the patient to adapt himself to the claims of life which he had hitherto—wittingly or unwittingly—failed to face." Frank distinguishes between a "scientific" cure and a "practical and social" cure. In practice, a cure is claimed when pathological symptoms are no longer seen, although this may be only the result of improved environmental conditions. Bezzola regards a cure as the removal of the bad suggestions induced by education, environment, and psychic trauma, so that the individual is free to educate himself. Maeder distinguishes between the strictly medical and the pedagogic attitude towards the patient. The latter includes, as well as removal of symptoms and restoration of ability, the synthesis of the personality and the integration of the individual as a member of the cosmos. Dr. Veraguth points out that the drive of life may be divided into four main branches from a common stem: The preservation and development, respectively, of the individual and of the species. The drive towards individual evolution, towards differentiation and progress, has received inadequate recognition, but its existence is self-evident. When its activity is limited to somatic processes the individual is an uneducable idiot, but its presence in normal men is reflected in the peculiar plasticity of the human brain; such characters as Faust or the hermit show instances of men whose flow of life energy is disproportionately strong along this channel. The drive towards development of the species expresses itself psychically in the higher forms of affectivity; the man in whom it is excessively energised is the prophet. In the healthy man the four principles should be evenly balanced within the limits of individual and age variation; in the neurotic there is, or has been in the past, a lack of this balance. Dr. Veraguth's definition of psychotherapeutic cure is the restoration of the balance, and he goes on to discuss how it is manifested. The objective signs are the permanence of the result achieved and the freeing of the patient from dependence on his doctor. He quotes a number of cases to show the caution that must be exercised in estimating these signs. "Permanence" must take into consideration the cyclical fluctuation of manic-depressive types; the passage from one psychic phase to another may easily give a false impression of cure. Renewed ability to work must only be taken as a criterion of cure when judged both qualitatively and quantitatively. Renewed capacity for enjoyment must include all aspects of life: the preponderance of sexual difficulties among psychotherapeutic patients has misled some practitioners into regarding restored enjoyment of this function as a sign of cure. Freedom from the doctor's influence must not be confused with a negative transference which is a sign that cure has not been effected. More important, however, than these, in Dr. Veraguth's opinion, is the subjective conviction of the erstwhile patient that his personality has grown, a feeling not of ability to work, but of self-application to work; not of capacity for enjoyment, but of determination to enjoy; not of adaptation to the demands of life, but of a personal choice between adaptation and resistance. A further and peculiar sign of cure is the sense of gratitude for his former symptoms. The patient finds that he has been cured of so much more than he originally complained of that he can rejoice in his former tribulations, since they led him to the treatment that opened up to him new fields of life. Dr. Veraguth ends with a plea, which we cordially endorse, for the publication by experienced psychotherapists of quantitative statistics.

[1] Schweizerische Medizinische Wochenschrift, August 27th.

FOULING OF FOOTWAYS BY DOGS.

IN the Royal Borough of Kensington there are many flats and maisonettes to which no gardens are attached, with the result that dogs are exercised on the footways. Owing to the fouling of the footways as a result of this practice, the borough council in 1921 obtained the sanction of the Home Secretary to the following by-law:—

"No person being in charge of a dog in any street or public place and having the dog on a lead shall allow or permit the dog to deposit its excrement upon the public footway.

"Any person offending against this by-law shall be liable to a penalty not exceeding 40*s*."

The by-law was made in pursuance of Section 23 of the Municipal Corporations Act, 1882, Section 16 of the Local Government Act, 1888, and Section 5 of the Local Government Act, 1899, for the good rule and government of the Royal borough. Two officers of the public health department report breaches of the by-law detected by them to the Health Committee. These officers are engaged on other outdoor duties and make their observations whilst passing from place to place in the borough. A leaflet calling attention to the requirements of the by-law has been delivered to a large number of dog owners, a poster in similar terms has been exhibited in the borough, and a printed slip has been attached to the rate demand notices. During 1922 two offences were reported to the Public Health Committee and a warning was issued in each case. In 1923 two warnings were issued and in the case of a third offence a summons was taken out, the defendant being fined 5*s*. In 1924 a conviction was obtained in each of the four summonses issued; in one case the fine was 5*s*. and in each of the other three 10*s*. Dr. James Fenton, borough medical officer of health, tells us that the condition of the footways in the borough has improved very considerably since the by-law came into operation, and that several other boroughs have adopted a similar measure. As Dr. Andrew Balfour has pointed out,[1] the traffic in London streets is now such that the dog can no longer use the roadway for his calls of nature and is obliged for purposes of safety and comfort to resort to the sidewalk. Mr. T. W. M. Cameron, M.R.C.V.S., of Edinburgh, has discussed [2] the dog as a carrier of disease to man, mentioning several roundworms and cestodes which might come into question apart from the dangerous hydatid. The Wellcome Bureau of Scientific Research examined numerous samples of excreta, presumed to be those of the dog, on London pavements in the neighbourhood

[1] THE LANCET, 1922, ii., 1165.
[2] THE LANCET, 1922, i., 564.

of Gordon-square. Eggs of helminths were found in a small proportion of cases, the type being that of ascaris in 3 per cent., of *Tænia serrata* in 2, and of ankylostoma in 1. In nearly 5 per cent. cysts of giardia were found and a new coccidium of the dog was discovered. The inquiry revealed no evidence of hydatid disease, and Dr. Balfour then expressed the opinion that the presence of dog excrement, however offensive on æsthetic grounds, was not to be regarded as disquieting from the point of view of public health. He admitted, however, that apart from the work of the Wellcome Bureau little, if anything, seemed to be known as to the dangers which might lurk in the fæces of dogs.

A CHANCE FOR THE AMATEUR PHILOSOPHER.

IT is supposed that philosophers can retire at will to some higher world where the air is so rarefied that they are undisturbed by the presence of the populace and where everything is so vague that it cannot be offensive. There are none who would find the gift of voluntary translation more useful or more enjoyable than members of the medical profession; but without long practice it is impossible to live in the atmospheric conditions of the abstract world. The novice only too frequently can be heard puffing and blowing in the air just above our heads, and though he may see more than the rest he appears uncomfortable and inadequately balanced. There is, however, a certain number of professionals (so to speak) who are willing to descend from their pinnacles and prescribe suitable exercises which are helpful without being ridiculous. Though nobody imbued with the scientific spirit willingly believes authorities, they can at least show the way by which they got to where they are; and no man can do more. The British Institute of Philosophical Studies is willing to arrange such assistance, and it suggests that certain courses of lectures would be particularly helpful to the medical man who comes back perforce to his material patients from time to time. During the next sessions there will be lectures by Prof. T. H. Pear on Psychology, by Prof. James Johnstone on Life and Mind, and by Prof. Leonard Russell on the Conception of Matter, and each of these is calculated to be of great interest to doctors. The Institute, which is under the presidency of Lord Balfour, will provide courses of lectures on the more important subjects coming within the scope of philosophy; will arrange classes under tutorial guidance; will give assistance to individuals in their reading and encourage research in philosophy, and will form a library. The temporary office is at 88, Kingsway, London, W.C., and it is to be hoped that members of the profession will avail themselves freely of the admirable facilities provided by the Institute. Details of the times and places of the lectures will be found on reference to our advertisement columns.

THE MOTOR EXHIBITION, 1925.

THE annual motor exhibition at Olympia, organised by the Society of Motor Manufacturers and Traders, Ltd., in connexion with the Royal Automobile Club, will be held from Oct. 9th to 17th. This great exhibition, which has always been international in character, promises this year to be one of the largest assemblies of everything pertaining to motor-cars that has ever been gathered under one roof, and additional importance attaches to the show as the Paris motor exhibition will not be held this autumn. Whatever gloomy views may be taken of certain British trades and industries, one can hardly feel despondent about the manufacture of motor-cars and their accessories, and in the last four years the number of motor vehicles registered in this country has increased by over 100,000 annually. On the one hand, the market for cars has greatly widened its boundaries, the difficulties attending mass production methods have been largely eliminated, and improved plant has increased output; on the other hand, labour is more costly, taxation heavier, and expenses higher, but nevertheless the balance is on the right side and car value to-day has never been approached at any period of the industry. The car that appeals to the average medical man may be said to be that of the £300 to £400 class, and it is in this class that the keenest competition on the part of the manufacturers has resulted in the maximum advantage to the purchaser. Although no revolution in price, design, or construction is foreshadowed, the process of evolution will be in evidence, not the least in these apparently minor details the perfection of which makes for the difference between owning a car and being owned by it. The exhibition will remain open daily from 10 A.M. to 10 P.M.

SUMMER-TIME in Great Britain ends at 3 A.M. on Sunday, Oct. 4th, when the clock will be put back to 2 A.M. In France the return to normal time takes place on Oct. 4th at midnight (zero hour), the change therefore being practically simultaneous on the two sides of the Channel. Belgium follows the French practice.

SOME idea of the admirable work done in Iraq during the past two years may be gained from the abstract of the report of the Director-General of Health Services, which appears on p. 733. Reversion to the "simplified" hygiene of purely Eastern government would be especially disastrous since railways and motors have opened up the country to the ravages of epidemics. It would be most regrettable if the British officers in the service should have to cease work before they can build up a local organisation whose members are ready and willing to do the personal work amongst the tribes which is so urgently needed in this disease-ridden country.

THE first social evening of the new session of the Royal Society of Medicine will be held on Tuesday, Oct. 27th, at 8.30 P.M., when Fellows and their guests will be received by the President, Sir StClair Thomson, who, at 9.30 P.M. will give a short address on "Shakespeare as a Guide in the Art and Practice of Medicine." The library will be open, and there will be an exhibition of the drugs which are mentioned in Shakespeare's plays; the display will be lent by the Wellcome Historical Medical Museum and arranged by Mr. C. J. S. Thompson, the curator.

SOCIETY OF SUPERINTENDENTS OF TUBERCULOSIS INSTITUTIONS.—It has been impossible to arrange to hold the proposed Provincial Meeting of this Society at Leeds. The ordinary meeting will be held in London in October. The exact date will be announced later.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—A series of lectures on Tuberculosis will be held in the Lecture-room of the Medical Society, 11, Chandos-street, during October, November, and December. The first lecture will be given on Oct. 12th at 5.30 P.M. by Dr. L. S. Burrell, on Tuberculosis from the Physician's Viewpoint. There is no fee for attendance at this series, and all members of the medical profession will be welcomed. On Monday, Oct. 5th, the Central London Throat, Nose and Ear Hospital will begin a three weeks' course in Laryngology, Rhinology, and Otology. The clinical course will be from about 9 A.M. to 5 P.M. daily, and an operative surgery class will also be held. The operative surgery and the clinical classes may be taken together or singly. The London School of Hygiene and Tropical Medicine have the first two of their series of eight clinical demonstrations on Tuesday, Oct. 6th, and Thursday, Oct. 8th, at 2 P.M. Dr. G. C. Low and Dr. P. Manson-Bahr will consider the more important diseases of tropical countries. Other courses in October will commence as follows: Oct. 12th, a combined course in Children's Diseases at the Paddington Green Hospital, Victoria Hospital for Children, and Children's Clinic; Oct. 19th, a course in Urology at St. Peter's Hospital; Oct. 26th, a course in Dermatology at St. John's Hospital. Copies of any syllabus, together with the Fellowship programme, may be obtained from the Secretary, 1, Wimpole-street, London, W. 1.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CXLI.—THE TREATMENT OF VISCEROPTOSIS.

A DIAGNOSIS of visceroptosis is one which it is only too easy to make on insufficient evidence, and which is only too readily accepted by the patient. To the lay mind the fact that the viscera are dropped or misplaced offers a reasonable explanation to account for symptoms of any and every kind; moreover, it is an idea which it is much easier to implant than to eradicate from the mind of the patient. Hence, it is most important to beware of informing patients that they have visceroptosis, whether general or of special organs such as the kidney, unless the clinical condition is explicable on no other pathological basis; further, when such a diagnosis is made it must be explained clearly that the condition is not a serious one and is readily amenable to treatment.

Possible Organic Lesions.

Before attempting any treatment for visceroptosis the possibility of other organic lesions such as peptic ulcer must be excluded as far as possible, and the diagnosis should never be made apart from radiographic evidence. Even when the latter appears to support the diagnosis, it must be remembered that many individuals who are apparently in perfect health can be shown to have considerable ptosis of such organs as the stomach or colon. In fact, the position of the viscera depends largely on the habitus or general bodily configuration of the patient. Individuals with a long chest and narrow intercostal angle almost invariably have their viscera considerably lower than the broad-chested type with a wide intercostal angle.

The viscera are retained in their normal positions by the abdominal muscles, which maintain a positive intra-abdominal pressure, rather than by the support of the various mesenteries and peritoneal ligaments. Hence, in the treatment of visceroptosis it is to the abdominal muscles that attention must be paid. In this disease, as in all others, prevention is better than cure. Perhaps the most common cause of visceroptosis as a clinical syndrome is pregnancy or particularly a series of pregnancies at relatively short intervals. When the uterus is emptied and contracts down within a few days from a large abdominal tumour to a small pelvic organ, the intra-abdominal pressure is much decreased, and if the patient is allowed to get up too early the abdominal muscles, which have long been on the stretch, are unable to maintain themselves in a sufficient degree of tonus to counteract the tendency of the abdominal viscera to drop downwards and forwards. Hence, in the prophylaxis of visceroptosis it is most important to insist on a patient after delivery remaining in bed or at least recumbent for a fortnight or longer if the abdominal wall is thin or if pregnancies have been frequent.

Restoration of Tone in Abdominal Muscles.

The ultimate cure of visceroptosis is dependent on the restoration of tone in the abdominal muscles, and it is therefore to this end that treatment must be directed. In too many cases abdominal massage is the sole method employed. Though massage may have its uses, particularly in the cases in which constipation is a marked feature, as far as the development of the abdominal musculature is concerned, it is vastly inferior to active movements. The patient should be given a series of exercises designed to bring these muscles into play; in severe and long-standing cases at the beginning the exercises will have to be comparatively light in character, but as the condition improves they can be increased in duration and severity. Where it is possible the patient should be placed under the charge of an expert in remedial exercises; moreover, it is always more satisfactory if these can be done in a class rather than individually, as the presence of other patients in a class tends to produce a competitive spirit and renders the maintenance of discipline more easy. It is impossible in the compass of these notes to describe the exercises in detail; in general, it may be said that they should consist mainly of active movements by the abdominal muscles and the diaphragm, which in most visceroptotic patients is unduly low with a restricted respiratory excursion. Breathing exercises are carried out lying on the back with the legs drawn up and the thorax partially fixed by the arms folded over the chest; the breathing is thus rendered mainly diaphragmatic in type. The recti muscles are exercised by raising the head and neck with the patient on the back and by flexion and extension of the hips with the patient in the same position. It is most important that the patient should be closely supervised especially in the earlier part of the training, in order to ensure that the movements are being carried out correctly and that they are not beyond the patient's strength. Moreover, in addition to the regular exercises done under supervision the importance of carrying out the treatment daily in the home must be impressed on the patient.

Constipation.

One of the most constant and troublesome symptoms in visceroptosis is obstinate constipation. In most cases this is due originally to the lax abdominal muscles having insufficient power to produce a complete evacuation. As a secondary result of this a condition of dyschezia results, in which the rectum becomes insensitive to distension with fæcal material. For the cure of the constipation it is essential that the patient should be re-educated in defæcation: it must be insisted that at a fixed hour after breakfast an attempt should be made to obtain a movement, and that the use of strong purgatives should be discontinued. At the beginning of treatment a daily soap-and-water enema may be necessary, but this should be gradually diminished in bulk from day to day. Massage of the colon is also useful in the treatment, and where possible this should to begin with be carried out by the masseuse with the patient on an X ray couch after a barium meal has been taken on the previous day to outline the large intestine; the masseuse is thus able to be sure of the exact position of the colon. If this procedure is not feasible the masseuse should be provided with a sketch or X ray photograph showing the outline of the colon.

Abdominal Support.

In severe cases an abdominal belt should be worn. This may be either of elastic and webbing material, or a leather and metal instrument such as the Curtis abdominal support. Although the latter is heavier and less comfortable to wear it gives better support and is free from the liability of the elastic type to stretch unduly. In either case the belt must be so adjusted that the direction of pressure must be upwards and backwards. It need not be worn when the patient is in bed or lying down, and when it is being applied the patient must invariably be in a recumbent position with the pelvis raised, as otherwise there is a grave risk of its tending to hold the viscera down rather than up. In cases where a belt is ordered the physician must be careful to explain to the patient that it is not in itself a cure and must not be made an excuse to discontinue the exercise treatment, which should be carried out with the belt removed.

In all true cases of visceroptosis all the organs, rather than a single one such as the stomach, colon, or kidney, are ptosed. Consequently, attempts to deal with individual organs are doomed to failure, though in some cases the most distressing symptoms are occasionally attributable to one particular organ, especially the kidney. In rare cases undue mobility of the latter may lead to severe attacks resembling

renal colic, but where these so-called Dietl's crises occur there is often an aberrant renal vessel which obstructs the ureter. In the vast majority of cases with nephroptosis any attempt at nephropexy only aggravates the condition. As a general rule surgery should never be advised unless there is undoubted evidence of ureteric obstruction.

Diet.

As regards diet, patients with visceroptosis are, as a rule, thin and should be encouraged to take a nourishing mixed diet of small bulk. As an intestinal lubricant to enable the fæces to be more readily expelled liquid paraffin is most invaluable and should be taken in small amounts at least twice a day. In cases with marked gastroptosis the patient should be instructed to lie down on the right side for half an hour after meals, as this tends to accelerate the passage of food from the stomach into the intestines.

In very severe cases with marked laxity of the abdominal wall the patient may be kept in bed for some weeks, the foot of the bed being supported on blocks. This takes the tension off the stretched abdominal muscles and allows them to some extent to recover their tone.

The Mental State.

Patients with visceroptosis are usually highly neurotic and often their main occupation in life becomes the minute observance and recording of their symptoms. This aspect of the case is often the most difficult to deal with, and quite apart from other considerations makes any operative treatment extremely undesirable. An attempt must be made to gain the patient's confidence and, if possible, to alter the general mental outlook. Naturally, the most difficult cases are those where the attention of the patient has been focused on some particular organ, such as the kidney, by the ill-judged remarks of the medical attendant.

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Special Articles.

PUBLIC HEALTH ADMINISTRATION.

ADMINISTRATIVE MACHINERY IN EUROPEAN COUNTRIES.*

(*Continued from p. 653.*)

IV. GERMANY.

THE German Reich (realm) is a national entity formed by the federation of 18 States, which, so long and in so far as the Reich does not use its legislative power, possess the right of enacting their own laws. Under various Articles of the Constitution of August 11th, 1919, the Reich has legislative authority in regard to matters affecting the population, the care of mothers, nurslings, children and the young, and health. The Reich Government supervises the execution of Reich laws by the authorities of the various States of which it is composed.

Questions of health affecting the Reich are dealt with mainly by the Reich Ministry of the Interior and the Reich Ministry of Labour. Department II. in the former conducts all business connected with public health, including medical staff, medical examinations and preventive measures against diseases, attempts to procure abortion, infantile mortality, tuberculosis, and the abuse of alcohol and tobacco; the supervision of public food, the advanced training of doctors, pharmacies, the foodstuffs trade, veterinary surgery, and, to a certain extent, industrial hygiene and poor relief come under this department. A special sub-department is directed by a medical counsellor in the Ministry, and two medical secretaries are employed. Department III. deals with education, child welfare, physical training, and training of professional welfare workers. The Reich Ministry of Labour deals with all matters affecting the care of workers and employees.

The Reich Health Office.

The Reich Health Bureau, which is under the control of the Ministry of the Interior, was founded in 1876 to assist the Chancellor and the Ministries in the drafting of legislation and in supervising the execution of laws concerning health. This Office keeps closely in touch with German scientific associations and the central health authorities of foreign countries, compiles medical and veterinary statistics, and promotes, by means of publications, knowledge of public and domestic hygiene. The works published by the Reich Health Office give the results of researches carried on by its members; the Medical Statistical Notes (Medizinalstatistische Mitteilungen) contain calculations based upon the annual statistics, while the Reich Health Office Bulletins (Veröffentlichungen aus dem Reichsgesundheitsamt) give current information as to the situation in Germany in respect of contagious diseases, the proceedings of legislative bodies, associations, &c., and the weekly and monthly statistics; an appendix is also published containing all relevant legal decisions. The Reich Health Office promotes popular education in hygiene by issuing a popular work entitled "Health Manual," as well as memoranda and pamphlets.

The Reich Health Office consists of four departments, the medical, chemical hygiene, bacteriological, and veterinary departments. Auxiliary to it is the Reich Health Council, an advisory body of which the individual members (numbering, at the present time, 75) are chosen by the Reichsrat for a period of five years from among men of prominence in the medical and veterinary spheres (men of science, practising doctors, and technical experts), the President and his deputy being chosen from among the members by the Reich Minister for the Interior. This Health Council is divided into 11 committees, viz.: (1) health matters in general (including questions relating to the health staff); (2) the control of foodstuffs; (3) the prevention of epidemics; (4) water-supply and the removal of waste products; (5) social and school hygiene; (6) factory and industrial hygiene; (7) marine and tropical hygiene; (8) population and race hygiene; (9) provision of medicaments (including the traffic in poisons); (10) veterinary matters (including questions affecting the veterinary personnel, and the inspection of slaughter-houses and meat); (11) statistics. It is the duty of the Reich Health Council to give advice, on request, to the authorities of the several States.

The laws regarding public health are executed by officials of the various Federal States, on lines laid down in the executive regulations issued by the Reich authorities.

Health Administration in the Federal States.

Where the Reich authorities have refrained from promulgating laws regarding public health, the German States, with Prussia at their head, have by their own laws organised a public health service on admirable lines. The highest Prussian health authority is the Ministry for Public Welfare. Department I. of this Ministry, which is under a doctor, deals with public health matters (including police sanitary regulations); Department II. deals with housing and land settlement, and Department III. with the care of the young and general welfare work. The Ministry also has control of the Robert Koch Institute for Infectious Diseases, the State Hydropathic Institute, two hygiene institutes, 10 medical analysis stations, two typhoid laboratories, and the State foodstuff

* Based on a Series of Reports on National Health Organisation to the Health Section of the League of Nations and on Statistical Handbooks prepared by the Section. Obtainable in Great Britain from Constable and Co.

laboratory. The Ministry is assisted by a State Health Council; for the provinces joint boards have been set up composed of lawyers and doctors. The police authorities of the provinces and districts (the Ober and Regierungspräsidenten) are advised by the Regierungs und Medizinalräte. The law of Sept. 19th, 1899, regulated the official duties of the medical officer of the "Kreis" (county), and established health committees in the communes (in places of over 5000 inhabitants). The work of the medical officers is regulated by the local police authorities (the Landrat, the Commissioner of Police, or the magistrate). It is the duty of the health committees to carry out a joint system of inspection, to support measures taken by the police authorities, to give expert advice and to make suggestions.

In the other German States the health authorities are organised on similar lines. In many instances the technical advisory body has the title of "State Office of Health," and is, in most cases, under the control of the Ministry of the Interior (in Thuringia it is under the Ministry of Commerce). Special Health Ministries under medical administration do not exist in the Reich or in any of the States.

The work of public instruction in matters of hygiene has been energetically taken in hand by a Reich Committee and by State Committees with their subsidiary organisations. The work of welfare and health offices specially concerned with care work (on behalf of infants, tuberculous persons, persons suffering from venereal disease, cripples, &c.), which have recently been established in large numbers by the Kreis and municipal authorities, is carried on by the public medical officers, specially appointed communal doctors, practising doctors, and a carefully trained staff of care workers. The competent State authorities direct this work.

The Medical Staff.

Prussia has, at the present time, at its disposal some 449 Kreis medical officers, of whom 274 receive full-time and 175 only part-time salaries. The medical officers of the Kreise are, for the most part, recruited from Kreis assistant medical officers (rarely from practising doctors), provided that they have passed the prescribed State medical examination; "Regierungs und Medizinalräte" are recruited from Kreis medical officers; while the Ministerialräte in the medical department of the Ministry for Public Welfare are mostly chosen from among the Regierungs und Medizinalräte. The whole territory of the Reich had in round numbers 950 medical officers of the categories mentioned at its disposal. In general the service is regulated as in Prussia.

In most of the States appointment as a State health official or medical officer is conditional upon passing the examination for State doctors, the regulations for which vary but little in different States. In Prussia, which is fairly typical, the candidate must not only have followed a course of lectures on forensic medicine and taken part for at least six months in the practical work of a psychiatric clinic, but he must also have completed a full course of study in social hygiene at Breslau, Charlottenburg, or Düsseldorf. In addition, he must have taken courses of pathological anatomy, bacteriological hygiene, and forensic medicine, each of at least three months' duration; and he must have acted as assistant in a psychiatric clinic for at least three months. The candidate may not be re-examined more than once. In Prussia it is a condition of appointment as Kreis medical officer that the candidate should have worked five years as an independent medical practitioner after passing the examination.

Special regulations apply to posts as tuberculosis expert or as medical officer in charge of infants, small children, cripples or persons suffering from alcoholism, or as school doctor. It is recommended that the communal medical officers, whose duty it is to advise the communal administration in all matters of public health and social hygiene, should be required to pass the examination prescribed for Kreis medical officers. In rural Kreise the communal medical work can be carried out by the Kreis medical officer, who also takes charge of the public health and social hygiene section of Kreis welfare centres. In the larger towns appointment of special communal medical officers is necessary, subject to the control of the medical officer of the Kreis or district. Among the assistants of medical officers in combating epidemics are disinfection officials. In many Kreise special disinfection officials have also been appointed to act as "health inspectors."

The medical organisations which have been formed in all the States of the Reich are, as a rule, representative professional bodies (associations of doctors, which, in some States, are legally regulated, and often have disciplinary powers in regard to their members). Their participation in the work of public health is of importance, inasmuch as they send representatives to the various State organisations of a technical medical character, the health councils, &c. The latter utilise their services for the purpose of bringing recommendations and proposals relating to special health questions to the notice of individual doctors.

V. AUSTRIA.

The organisation of the Imperial Health Service is maintained in its essentials in the Republic. The Health Department in the Ministry for Internal Affairs has been abolished, and a special section of the Federal Ministry for Social Administration, the Public Health Office, is now the highest authority in health matters. The organisation comprises a principal board of health, provincial boards of health, district commissionerships, divisional medical officers, municipal medical officers, communal and district medical officers. The provinces (formerly Crown lands) are Vienna, Lower Austria, Upper Austria, Salzburg, Styria, Carinthia, Tyrol, Vorarlberg, and the Burgenland. Each province has its own health officers, and a provincial board of health which acts as scientific and technical adviser. Each province is divided into administrative districts (113 throughout Austria)—under a district commissioner (Bezirkshauptmann), with a divisional medical officer attached. Towns possessing a separate statute are administered politically by the mayor, instead of the district commissioner, with a municipal council. To this council is attached a municipal health officer (Stadtphysikus), while in boroughs or villages the administrative organ and scientific expert are represented by the communal medical officer (Gemeindearzt) or by a district medical officer in charge of several communes (Distriktarzt).

The law of April 20th, 1870 (Imperial Gazette, No. 68, of the "Imperial Public Health Law"), amended and supplemented, still forms the main basis of the organisation of the public health services. It places the supreme control over the whole health organisation and of all medical affairs under the direction of the Government, acting either directly or indirectly through the provincial authorities. The Government is thus responsible for the records of the health personnel and for its supervision; for the supervision of all hospitals, including lunatic asylums, vaccination establishments, and of spas; private institutions may not be established without permission from the State. The application of the laws regarding infectious diseases, the control of traffic in drugs and poison, the supervision of vaccination—these and all cognate duties are vested in the Government. The responsibility for the actual carrying out of the law, and for the promotion of activities of the public health services, rests on the communes, on lines laid down by provincial legislation which in turn are framed to give effect to the laws issued by the Government to apply to the whole Republic. Included in the duties of the communes, which are carried out by municipal or district medical officers, is the drawing up of periodical health reports and submitting them to Government authorities.

The health administration of Austria, like its political administration, is thus carried out by authorities of three grades, of which the highest is the Office of Public Health previously referred to.

The first or lowest grade are the municipal, communal, or district medical officers. Officers of the second grade are the medical officers attached to Provincial Governments. In these two grades the executive work in connexion with public health is carried out by medical men, acting under the administration of the corresponding local authority.[1]

Constitution of the Office of Public Health.

The Office of Public Health in the Federal Ministry for Social Affairs (third grade) combines executive powers with the duties of supervising and giving expert opinions and is, as has been said, the central authority on all health matters. At the present time the Office of Public Health consists of the four following departments:—

Dept. 1.—General health administration, dealing among other with matters affecting the professional standing of medical men; the education of doctors in general as well as of State medical officers; the organisation of public health under the Federal authorities. The public health aspects of social and private insurance, industrial hygiene, statistics, and health propaganda also come under the control of this department, which is further charged with the editorial work of the "Mitteilungen des Volksgesundheitsamtes" (Bulletin of the National Public Health Office).

Dept. 2 has control of measures for the maintenance of public health, including, for example, prophylaxis against and prevention of infectious diseases; bacteriological institutes for the manufacture of vaccines; the campaign against tuberculosis, venereal diseases, and alcoholism; water-supply; domestic hygiene and the hygiene of nutrition. The professional training of chemists and druggists and their status is supervised by this department as also the Institute of Chemico-Pharmaceutical Research.

Dept. 3 has the general control of hospitals administered by the State, and of schools for the training of nurses and midwives, also the care of mothers, infants, and young children, including school hygiene. Red Cross and first-aid arrangements are here dealt with.

Dept. 4, under a trained lawyer, deals with the legal aspects of public health questions, including lunacy administration.

A medical officer of the Federal Ministry of War serves as a representative of that Ministry on the Office of Public Health. In 1922 this Office had 32 doctors among its members. The procedure adopted in connexion with sanitary legislation is that the Central Office issues circular decrees to all the provincial offices, which transmit instructions to the district authorities. The Office of Public Health has no laboratories of its own for scientific research.

The Central and Provincial Boards of Health.

Over and above this administrative administration the Imperial Public Health Law provides for the establishment of a Central Board of Health, whose duty it is to assist the administration as an advisory and expert organisation. The "ordinary" members have the right to the title of Public Health Councillor and are unpaid. Extraordinary members include specialists called in as occasion requires. There are corresponding provincial boards of health whose members include the chief sanitary officials of the provinces. The chief public official of each province makes journeys of inspection throughout his district in order to supervise the application of sanitary law. The communal doctors, or municipal medical officers as the case may be, are also required to make journeys through their districts for the same purpose. On the outbreak of epidemics they must take any measures which they deem to be necessary on their own responsibility, and under inter-State agreements they are now empowered to cross the frontiers and to enforce urgent measures in association with the frontier authorities of any other country concerned. Since the National Sanitary Department forms a branch of the political administration and holds a place amongst the organisations the medical officials are subordinate in purely sanitary matters to the non-medical heads of these organisations. In the event of discord no legal guarantee is provided that the views of the medical officials will prevail. As a matter of fact, however, no disputes have arisen.

In 1918 the duties of the Army Health Service were transferred to the Office of Public Health. The present army administration has no hospital of its own and sick soldiers receive treatment in civilian hospitals.

The Training of the Health Personnel.

The professional training of all doctors, dental operatives, midwives, and pharmaceutical chemists is regulated by the State, and the requirements for courses of study and examinations are indicated in this report. Post-graduate training in order to obtain a post as doctor in the Public Sanitary Service is required, and the passing of an examination in hygiene and sanitary law, medical jurisprudence, including forensic psychology; pharmacology, including a knowledge of the commoner poisons; veterinary police regulations. The length of special training required is not specified, but it is stated that a reform of the district medical officers' examination is contemplated. As to the higher training of senior State medical officers, special courses are held from time to time in university towns. All State medical officers are Federal officials and their work under the State health administration must be conducted as their main profession. Medical officers of the first degree are not forbidden private practice.

Pharmaceutical Chemists.—A distinction is drawn between public pharmacies on the one hand and the private pharmacies of doctors and emergency pharmaceutical installations on the other. Public pharmacists are either licensed or proprietary. The applicant for authority to carry on the business of a public pharmacist must have undergone technical training for a minimum period of five years after taking his degree of Master of Pharmacy, or in the case of establishment of new pharmacists for 15 years. A doctor may only maintain a house pharmacy if there is no public pharmacy near his place of residence.

Dental Operatives.—The legal status of fully qualified dental practitioners and that of dental operatives is laid down by the State. Owing to the shortage of dental operatives just after the war special concessions were made to certain dental operatives who began a three years' course of training before Oct. 1st, 1920, but since these concessions do not apply to those who began their training after this date, the dental operative in Austria with a recognised professional status must necessarily disappear in the course of a few decades.

Midwives.—There is as yet no uniform law on midwifery applicable to the whole country. Women who wish to become midwives have to take a ten months' course of instruction in one of six Austrian instructional institutes and to pass an examination, and they are then entitled to practise midwifery as an independent profession throughout the territory of Austria. Before beginning practice they have to report to the administrative authorities and are placed under the supervision of the district medical officer. No State midwifery system has been instituted. The communes and towns have to provide midwives for prospective mothers without means. A proposal for a general midwifery law, which has been drawn up with the assistance of Prof. L. Piskacek, is awaiting consideration by Parliament.

[1] In Vienna the first and second grade are in the hands of the single authority, the Municipal Council.

GUY'S HOSPITAL MEDICAL SCHOOL: SENIOR SCIENCE SCHOLARSHIPS.—The following awards have been made at Guy's Hospital Medical School: O. A. Beadle, New College, Oxford, War Memorial scholarship, £80; L. T. Ride, New College, Oxford, £80.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Lymphogranulomatous Tumour.

AT a recent meeting of the Surgical Society of Vienna, Dr. Steindl demonstrated a tumour obtained from a woman aged 38, with a history of vague pains in the abdomen and continuous loss of flesh for a year. Clinical investigation confirmed the diagnosis of cancer of the stomach, but on operation it was found that the muscular layers of the stomach were hypertrophied, while the mucosa was replaced by a brownish, soft, cushion-like tissue, showing small yellowish nodules in its substance; the pyloric end in particular was thus affected. No ulcerations were visible, and on operation there was nothing of a pathological nature to be noted in the intestines, the liver, pancreas or the mesenteric glands. The microscopic sections of the parts removed, also of some of the glands taken from the gastro-iliac ligament and the smaller omentum, showed the typical picture of lymphogranulomatosis. Two months after operation the percentage of both mononuclear and eosinophil leucocytes had gone down considerably, while the lymphocytes had increased threefold to 36·7 per cent. Dr. Steindl claimed that this was the first case of lymphogranulomatosis localised in the stomach which had been successfully operated upon. A second case was reported by Prof. Ewald, who stated that ten years ago he had seen a woman with an inoperable and fixed malignant growth who suffered from attacks of severe dyspnœa, but showing no other symptoms of malignant disease. The surgeon attempted to diminish the size of the tumour by a partial resection, but the operation had to be abandoned and a tracheotomy was performed. Microscopic examination of portions of the tumour showed the presence not of the suspected sarcoma, but of lymphogranulomatosis. After-treatment with tuberculin and X rays caused a rapid diminution of the tumour. Since then the patient has undergone a course of X ray treatment twice or three times a year, but this is sufficient to keep the condition in check. The struma has not reappeared, and there are no enlarged glands in the neck, although a swelling sometimes appears in the mediastinum, causing attacks of dyspnœa.

Flora and Fauna of Hot Springs.

Prof. Hans Molisch, who for the past three years has been working in the botanical and physiological institute of the University of Tokio (Japan), read a very interesting paper in the Biological Society of Vienna on his return to this city. In certain districts of Japan, he said, nearly every house has its own hot spring. He investigated the flora and the fauna of these springs and found that, up to the temperature of 69° C., living organisms, such as bacteria, algæ, amœbæ, infusoria, rotifers, and eels, could exist therein. The most interesting organism, however, is the cyanophyceæ. This group of algæ flourishes in water at a temperature which kills off, in a short time, all other living organisms. They can also live in ordinary water, and the spores of these plants are present in nearly all springs and rivulets in large numbers. Prof. Molisch thinks that the thermophile bacteria and algæ are the direct descendants of the aboriginal organisms which inhabited the earth at a time when its surface and its waters were very hot.

Outbreak of Typhoid near Vienna.

Typhoid fever in our city is such a rarity, thanks to our mountain water-supply, that many students of medicine here never see a case in the hospitals. There was some excitement, therefore, when it became known that in a small holiday resort near Vienna a few cases had occurred; 25 persons were infected and four died before radical measures for the control of the outbreak were instituted by the local authorities, a rather regrettable delay. It appears that the epidemic has been introduced by visitors returning from Italy. This year many holiday makers and "sun-seekers" travelled from Austria to Italy, especially to the eastern coast, and it is presumed that the unwonted kind of food, as well as the large quantity of fruit consumed there, upset the digestions of many of these excursionists, and in addition was responsible for the original cases of typhoid. In connexion with this occurrence very marked attention is being paid now to a new possible source of contamination of the Vienna water-supply; 40 per cent. of the water is supplied by wells and springs originating in the Rax mountains, which lie about 60 miles south-west from Vienna, and are some 6500 feet high. The wonderful scenery of this Alpine district attracts enormous numbers of visitors yearly, and a funicular railway to the summit of the Rax plateau is now under construction. The Board of Health of Vienna, however, has recently pointed out that the influx of visitors following on the construction of the railway will constitute a potential source of contamination of these springs, and thus threaten the health of Vienna. The Board advises either the cessation of the railway work until all springs are adequately protected, or else the construction of a new water-supply. It must be added, however, that geological experts nevertheless regard such fears as groundless, since the geological strata intervening between the course of the railway and the springs are more than sufficient to guarantee perfect sterility of all water that might possibly trickle through to the springs.

MEMORIAL TO HIPPOCRATES.

Dr. Ernest Mayer Neville, of Ealing, London, W., has conceived, designed, and executed personally a memorial to "Hippocrates, the Father of Medicine." The memorial is a presentation of the "Oath of Hippocrates" in a setting of classic Greek antiquity. It will be seen from the reproduction given below that this conception is expressed through the medium of a Greek temple, at the entrance of which are placed two tablets, bearing the oath engraved in Greek and English.

The Hippocratic oath is given in the original classic Greek form (Ionic dialect, edition Littré) side by side with the English translation. The spatial distribution of the texts has been arranged in a symmetrical, compact, and organic manner, in correspondence with the general architectonic design of the memorial. They are engraved in classic Greek fashion on oblong tablets which have ornamental borders and corners of classic Greek design. In the English translation the author has striven to keep as close to the original text as is compatible with English phraseology and meaning. The initial part of the oath has been emphasised by treating it separately as a kind of preamble, and the end of the oath has also been accentuated by letting it stand out quasi as a finale, a warning memento. (T'ANANTIA TOYTEON—REVERSE BE MY LOT.)

The tablets are flanked by caryatids, draped figures from the temple of Erechtheus (Erechtheion) on the Acropolis of Athens, a building in pure Ionic style (original specimen now in the British Museum, of which they are direct copies). They are raised on pedestals, which are replicas in style of the original wall on which the caryatids of the Erechtheion stood. The face of each pedestal is guarded by a snake, the symbol of medical art and perspicacity, copied directly from the original statue of Apollo Citharoedus (Cyrene) in the British Museum. These snakes are conspicuous through their natural and graceful poise and the other reptilian characteristics. The caryatids support the entablature and the pediment, Ionic in order. The centre of the pediment is held by the dominating head of Asclepius, the God of Medicine, expressive of exquisite physical beauty, serene wisdom, and divine benevolence; it is a direct copy of the original in the British Museum. The snakes mentioned above have their gaze fixed upon this head,

as if compelled by its magnetism. The whole structure of the temple rests, in accordance with classic Greek feeling, on steps, of which there are seven, a number symbolical of spiritual values. The background of the memorial is bordered by classical ornamental design.

The original is in plaster-of-Paris, 5 ft. by 5½ ft., weighing 250 lb., and has been on private exhibition to leading British medical men. It was also inspected on the occasion of the visit of the Inter-State Post-Graduate Assembly of America. As a result of suggestions made, a large-size photogravure de luxe of the tablet will be reproduced by a well-known house and published in limited numbers for the medical profession only.

THE MEMORIAL TO HIPPOCRATES.

Translation of the Oath.—I swear by Apollo the healer, and Asclepius, and Hygieia, and Panacea, and all the gods and goddesses—and I make them my witnesses—that, according to my ability and judgment, I will keep this oath and this covenant: to reckon him who taught me this art even as dear to me as those who bore me, to share with him my substance and supply his necessities, if need be, to regard his offspring as my own brethren, and to teach them this art, if they should wish to learn it, without fee or stipulation, and that by precept, lecture, and every other mode of instruction, I will impart a knowledge of the art to my own sons, and the sons of him who taught me, and to disciples bound by covenant and oath according to the law of medicine, but to none other. The treatment which I will follow shall be for the benefit of my patients, according to my ability and judgment, and not for their injury, nor for any deleterious or evil purpose. I will not give a deadly drug to anyone, though it be asked of me, nor suggest any such course, nor will I aid a woman to procure abortion. With purity and with holiness I will pass my life and practise my art. I will not cut a person who is suffering with a stone, but will leave this to be done by practitioners of this work. Into whatever houses I enter I will go into them for the benefit of the sick, and will abstain from every voluntary act of wrongdoing and corruption, and further from the seduction of females or males, bond or free. Whatever in my attendance on the sick or even apart therefrom, I may see or hear concerning the life of men which ought not to be revealed, I will never divulge, deeming that on such matters we should be silent. While I continue to keep this oath and break it not, may it be granted me to enjoy life and art alike, with good repute among all men for all time. But should I trespass and forswear myself, may the reverse be my lot.

PROCEEDINGS OF THE ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.*

(*Continued from p. 619.*)

Joint Tuberculosis Council.

(App. XCIII. and Q. 22184–22251.)

THIS Council claims to represent the collective views of medical men engaged, officially or otherwise, in combating tuberculosis. Sir Henry Gauvain and Dr. Lissant Cox presented the evidence.

It was submitted that the special measures adopted in fighting tuberculosis, in association with the general advance in other public health work, have done their part in reducing the mortality from this disease, and that, apart from the actual fall in the death-rate from this disease, the number of "carrier" cases was diminishing, and also that—

> The education of tuberculous patients in elementary hygienic methods and the isolation in hospitals of infective cases from overcrowded and insanitary homes is having, and is bound to have, a beneficial effect on the number of new cases occurring.

All tuberculosis work now centres in the dispensary, which is not ordinarily a centre for treatment but for diagnosis, with the aid of the special facilities which exist at the dispensary, and for consultation between the tuberculosis officer and the general practitioner. The Council urged that there should be a special extension of sickness benefit for tuberculous persons, as their premature return to work is positively harmful to themselves and to their families. The opinion was expressed that societies should use their surpluses to aid specially research and care work in connexion with tuberculosis.

The return of patients from the sanatorium to their original occupations was advisable, the insured person being given part-time employment and continuing to receive sickness benefit, subject to more or less continuous medical supervision.

> Would you expect any trade-union objections to such part-time arrangements?—No, not so long as the arrangements were not abused.
>
> Would you anticipate that employers would willingly meet the difficulties of organisation of their work consequent upon taking on part-time men who probably would require special arrangements in view of their medical history?—We do not suggest that employers should be expected to alter their arrangements for odd cases, but most cases, we think, could be fitted in without special arrangements upsetting other workers.

The witnesses said that the part-time employment of men in their ordinary occupations should have a sympathetic public opinion behind it, and that it was preferable to establishing colonies—indeed, they doubted if the Papworth experiment, while in itself a brilliant success, could be reproduced generally under public management.

Cambridgeshire Tuberculosis After-Care Association.

(App. LXXXIII. and Q. 20856–20931.)

Dr. P. C. Varrier-Jones and Mr. Bunnett gave evidence. They pointed out that the Insurance Act presupposes that insured persons will either be wholly incapable of work or else will be able to earn a normal wage, and that, in the special case of the tuberculous person, to limit cash payments to those who are wholly incapable of work is definitely harmful to the treatment of this disease, and brings with it serious and expensive consequences.

> One of two things happens at the present time: either the patient is afraid to work at all (a six months' stay in a sanatorium makes it the more difficult to begin again), because he fears that he will be unable to stand the strain; or the patient attempts a full day's work under commercial conditions and almost immediately breaks down.

The longer the ex-sanatorium patient is kept as a productive unit of society, the less fear is there of the family's resistance being lowered and of the spread of the disease among them. This point has been proved at the Papworth Village Settlement, where up to the present, with graduated sheltered employment for the bread-winner, no case of pulmonary or other tuberculosis has been discovered in the children.

The payment of sickness benefit to a partially incapacitated tuberculous person could be justified on the ground that the gradual employment of the tuberculous person prevents the spread of infection. Certificates should be given signed by the general practitioner and countersigned by the tuberculosis officer. Such partial employment can best be carried out under sheltered conditions in a colony such as Papworth.

> We do not attempt to train a man to be a carpenter, or whatever it may be, and return him to the outside world, because the competition is too great; but we are able to set him up in workshops in the Village Settlement and provide him and his family with proper housing conditions, and they remain there for the rest of their lives, earning wages in the industries which now have a turnover of over £50,000 a year.

About 75 to 80 per cent. of the men in the Village Settlement are ex-Service men in receipt of a pension, and Dr. Varrier-Jones is anxious, by the operation of a scheme of sickness benefit for partly employed tuberculous men, to place the ordinary civilian in the same economic position as the ex-Service men.

The London County Council on the Treatment of Tuberculosis.

(App. LXXXIV. and Q. 20932–21050.)

This evidence, given by Mr. G. H. Walmisley, did not differ in any material respect from the evidence given by the Joint Tuberculosis Council and the Cambridgeshire After-Care Association.

Grants from the National Health Insurance Funds were recommended to be made in aid of approved work-centres at which post-sanatorium cases could be employed under the medical supervision of the tuberculosis officer, and it was also proposed that the surpluses of Approved Societies should be applied in part for the assistance of tuberculous persons on a similar basis to the provision made for ex-Service men by the British Red Cross and United Services Fund.

The experience of the Council, generally, and the operation of an experimental scheme at Hatton Garden in particular, and also the discouraging result of efforts to find suitable employment for tuberculous persons in the open market, have led the Council to the view that work-centres offer the most favourable opportunity for the employment of many such persons. As to persons suffering from other complaints the witness said that he knew of none to which the same arguments would apply with equal force.

> Have you ever considered whether there is a practicable case for doing something for the blind man to get half a day's remunerative work on the lines of your tuberculosis scheme?—I think the cases are similar to a certain point, but you do not, in the case of the blind, get the result, by doing this part-time work, of improving the man's health.

Financial aid was essential to place the ordinary civilian in the same economic position as the ex-Service man with his pension.

British Social Hygiene Council.

(App. LXXXII. and Q. 20760–20855.)

The National Council for Combating Venereal Diseases, founded as a voluntary organisation in 1914, has, since 1918, been in receipt of an annual grant from the Ministry of Health for certain approved forms of propaganda work. It became an incorporated body in 1922. It is now known as the British Social Hygiene Council.

Evidence was given by Mr. E. B. Turner, Dr. Otto May, Mr. Leonard Bowden, and Dr. P. A. Clements.

* References to the paragraphs in the printed statements issued as appendices to the reports of the oral evidence are given thus: "App. X. 69," and references to the oral evidence thus—Q. 1369.

It was pointed out that there is no permissive clause in the National Health Insurance Act by which Approved Societies or Insurance Committees, if they so desire, may contribute from their benefit fund to the funds of the National Council or, indeed, any society engaged in research or health propaganda. It was also urged that the medical benefit regulations should be amended to provide for more detailed certification, and also that efforts should be made to improve the equipment of the general practitioner so as to enable him to make adequate modern diagnosis and give the required treatment.

Of the whole of the practitioners in London there are only 400 men who are qualified to be supplied with free salvarsan, and those 400 are the result of a very intensive campaign which was carried on in 1917 to 1918. . . . The ideal we should like would be that the practitioners throughout the whole country should be the first line of defence against these illnesses, that they should be encouraged in every way to become absolutely *au fait* with modern up-to-date methods, and that they should then employ them the moment they come across their cases.

The London Insurance Committee.

(App. XCVIII. and Q. 22838–22974.)

Mr. Henry Lesser gave evidence as to the working of the medical benefit scheme in London. He urged that the whole of the skill of every insurance practitioner should be available for his patients without charge, and he agreed that it was essential that this recommendation should go hand in hand with the Committee's wider proposal that a complete general practitioner service with a coördinated hospital service should be made available to insured persons at the earliest opportunity.

The Insurance Committee should have power, it was suggested, to refuse admission to the panel when, after consultation with the Panel Committee, they thought this to be desirable. The largest panels should be further limited with the advantage, amongst others, of enabling young practitioners to get a footing in the service. The witness said that the Committee were not in possession of evidence to show that the London medical service was inferior to that given elsewhere. He said that it was a fair and an improving service.

Amongst minor recommendations the Committee said that power should be given to the Medical Service Subcommittee to require witnesses to give evidence on oath, and that in the case of an appeal made by a practitioner against a decision of the Committee costs should be awarded to follow the result of the appeal.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Comdr. A. F. Fleming is placed on the Retd. List with the rank of Surg. Capt.

Surg. Lt. A. G. Bee to be Surg. Lt.-Comdr.

R. C. Foster to be Surg. Lt.

ROYAL NAVAL VOLUNTEER RESERVE.

Proby. Surg. Lt. (D.) C. H. A. Fido to be Surg. Lt. (D.).

ROYAL ARMY MEDICAL CORPS.

Maj. W. C. Nimmo, from half-pay list, retires on ret. pay on account of ill-health.

Maj. R. C. Wilmot to be Lt.-Col., vice Lt.-Col. F. W. W. Dawson, ret.

Capt. G. L. K. Finlay to be Temp. Capt., and relinquishes the rank of Capt.

ARMY RESERVE OF OFFICERS.

2nd Lt. J. V. Dockray, from the Buffs, Reg. Army Res. of Off., to be Lt.

TERRITORIAL ARMY.

Capt. J. Walker to be Maj.

ROYAL AIR FORCE.

Flying Officer S. G. Gilmore and R. H. Stanbridge are granted permanent commissions in the rank stated.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are some of the health statistics of a city, six county boroughs, and one Scotch burgh for 1924 :—

Name of town.	Estimated mid-year population (R.-G.).	Birth-rate.	Death-rates per 1000 of the population.				Death-rates per 1000 births.		
			All causes.	Tuberculosis.	Cancer.	Resp. diseases with Influenza.	Neonatal mortality.	Infant mortality.	Maternal mort. from childbirth.
Coventry C. ..	132,000	16·0	9·6	1·11	1·12	1·8	37	79	4·2
Stockport C.B. .	126,000	16·4	13·9	1·16	1·33	3·8	29	87	5·8
Preston C.B. ..	123,100	18·9	13·9	1·13	1·29	3·6	42	97	6·0
Huddersfield C.B.	111,800	14·5	14·0	1·08	1·57	3·8	48	97	3·7
Halifax C.B. ..	98,750	14·9	15·3	0·71	—	—	57	96	4·0
Northampton C.B.	93,590	16·4	11·1	1·10	1·39	2·2	25	52	4·6
Paisley B... ..	86,647	21·6	16·1	1·06	1·25	3·7	47	139	9·6
Warrington C.B.	78,120	21·0	11·6	1·41	1·07	2·6	30	84	4·3

C. = city. C.B. = county borough. B. = burgh.
— = not given.

Coventry.

Dr. E. H. Snell reports that the usual re-inspection was made of all the houses which have been converted from "back-to-back" to "through-ventilated" houses since 1909; and these houses were, without exception, found to be properly occupied as through-ventilated houses. In discussing the cause for the rise in the infant mortality-rate in 1924, as compared with the previous year, Dr. Snell points out that in addition to the increase of 2·5 for whooping-cough and 2·9 for bronchitis, there is a rise of 4 per 1000 births for diarrhœa. The summer of 1924 was cold and wet and an increase in the diarrhœa-rate was not to be expected. Dr. Snell says it is impossible to avoid the conclusion that some of this increase in the infant mortality-rate is due to the set-back in the work of the health visitors, caused by the reduction of their number from ten to five at the beginning of 1923. The number has now been increased to eight by the last addition to the staff in October, 1924. Only 18 specimens of milk were examined for tubercle, the results being negative; and Dr. Snell points out that the absence of legislation forbidding the movement of cows found to be giving tuberculous milk almost nullifies the advantages of the milk clauses, although this will, it is hoped, be remedied by the re-introduction of the Tuberculosis Order.

Dr. J. McG. Williams reports as the most notable event of the year the opening of the King Edward VII. Memorial Sanatorium, which occupies a fine position on the high ground of Hartford Hill, about two miles from Warwick. The sanatorium accommodates 66 men, 50 women, and 34 children, and is intended for early cases only. The institutional treatment of tuberculosis is carried out by the Warwickshire and Coventry Joint Committee for Tuberculosis which also used the Bramcote Sanatorium as their second institution. Dr. Snell thinks that one of the greatest objections to such delegation of the institutional treatment of tuberculosis to a special committee with its own medical officers, is the fact that there is thus formed a more or less water-tight compartment with a tendency to regard the treatment of the

patient as the beginning and end of the campaign against tuberculosis. The Ministry of Health have always advised that tuberculosis officers should be closely associated with the preventive measures of the local authority. With a view to bringing about such an association, the Joint Committee have forwarded to the various sanitary authorities of the county the recommendation of the Ministry that the tuberculosis officers should be also appointed assistant medical officers of health. Some of the sanitary authorities fell in with the proposal, but others, amongst which was the city of Coventry, did not.

Stockport.

Dr. Arthur G. Jenner records 37 notifications of encephalitis lethargica with eight deaths. In two cases there was evidence of direct infection. The borough maternity home, "Glebe House," with its eight beds, admitted 192 cases during the year. The average stay of each patient was 14 days, and no maternal deaths occurred. As the accommodation at Glebe House is inadequate, the corporation have purchased the Mile End Hall Estate where, after the necessary alterations have been carried out, there will be accommodation for 15 cases. The number of new houses erected during 1924 was 241, as compared with 176 during the previous year, and the number in course of building at the end of the year was 351. In spite of this improvement, Dr. Jenner calls attention to the lack of houses of the smaller type. Only 11 samples of milk were examined for tubercle, a positive result being obtained in one instance. Six cases of typhoid fever were notified, two of which were traced to the eating of mussels, but the names of the vendors of the mussels could not be ascertained.

Preston.

Dr. F. A. Sharpe says the pollution of the atmosphere by industrial smoke demands more attention from his committee than it has hitherto received and recommends the appointment of an inspector, trained in boiler management, with the suppression of smoke as his one duty. The beauty of the town revealed in the clear smokeless weather prevailing last Whitsuntide was, he says, a matter of universal comment and delight. The Preston Committee still adopt the over-generous limit of five minutes black smoke in a half hour observation.

Dr. Sharpe gives an interesting account of an unrecognised outbreak of small-pox at a boys' home. On Feb. 16th he was asked to see a girl resident at a laundry and gave his opinion that the patient was suffering from chicken-pox, but he arranged for her removal to the isolation hospital. In a day or two the symptoms became suggestive, and after consultation, Dr. Sharpe decided that the case was one of small-pox. Inquiries showed that the laundry did work for a boys' home, and it was found that at the boys' home there had been 15 cases, the first beginning on Christmas Day and the last on Jan. 12th, of an ailment considered to be chicken-pox. The outbreak at the boys' home infected all but one of eight boys who were not protected by vaccination; it also infected 7 out of 56 boys who were protected by vaccination, and it immunised the boys who were attacked against successful revaccination. All the cases were of a mild type.

Captain R. Finch, the veterinary surgeon, shows that energetic efforts are being made to improve the milk- and meat-supply of Preston. Out of 162 samples of mixed milk examined for tubercle, 19 gave a positive result. In each case the positive sample was followed in order to eliminate the cow or cows giving tuberculous milk. In 16 cases the cows with tuberculous udders were found. At two of the farms there were two cows with tuberculous udders. In the three remaining cases where the tuberculous udders could not be found, animals had been sold off the premises prior to the visit of the veterinary surgeon. There are no Grade A producers in Preston and there is one retailer licensed to sell Certified Milk.

Huddersfield.

Dr. S. G. Moore reports that 323 new houses were erected during 1924. Of these 69 were built by the corporation and 254 by private enterprise. Of these latter 156 were built with State assistance and 174 were suitable for members of the artisan class. Nevertheless Dr. Moore tells us that no one in possession of adequate information can question that at the present time there is grievous lack of dwellings for the people of the borough. Under the scheme for the voluntary notification of pregnancy 568 notifications were received, the total births being 1627. Four "home helps" are employed to take over the household duties in the homes of maternity cases, and two charwomen for the washing and heavy cleaning. Seventy-two samples of milk were examined for tubercle and five were found to be infected.

Halifax.

Dr. Cyril Banks reports that the deaths in Halifax (1511) exceeded the births (1481). Ten cases of typhoid fever were notified with one death. When blood tests were carried out the type of disease was found to be paratyphoid B. Five of the cases occurred at an unusual time of the year—namely, in the first half of May. Similar outbreaks occurred in other parts of the West Riding and the medical officers of health pooled their experiences, but no origin could be assigned and no particular article of diet was incriminated. There were 38 notifications of diphtheria with five deaths. Of the four deaths which occurred in the fever hospital, three of the patients were admitted in a moribund condition, illustrating the need for immediate medical advice for sore throat and the early administration of antitoxin. Dr. Banks is doubtful as to the value of hospital treatment for broncho-pneumonia complicating measles. The outlook when pneumonia has set in is not good. Wards set aside for such cases would remain idle for long periods and the difficulty of securing nurses at short notice is considerable. Influenza reached its height about the middle of March. In this epidemic the illness began suddenly with shivering and pains in the head or back. There was great prostration and in many cases vomiting with or without abdominal pain. Diarrhœa was frequently present. The temperature was high for three or four days and recovery was slow, there being loss of appetite, irritability, loss of temper, and great mental depression. There were 73 deaths recorded, being more than the deaths from all forms of tuberculosis. The suggestion is put forward that certified midwives should wear a badge, in order to distinguish them from untrained women.

Northampton.

Dr. J. Doig McCrindle reports that scarlet fever of a mild type was very prevalent; 1056 cases were notified with six deaths. A table shows that this is the largest number of notifications since 1904, when there were 2224 cases with 40 deaths. The provision of new dwellings does not keep pace with the needs of the people and the unsatisfactory housing conditions continue with little alleviation. The methods of scavenging and refuse disposal are commented on adversely. Only a small portion of the refuse is dealt with at the destructor, which is situated in a populous district and is a frequent cause of complaint. Most of the refuse is deposited on tips, which are a source of nuisance to the surrounding inhabitants. The maternity and children welfare committee obtain the milk which they need from a company with a Grade A licence. The clinical tuberculosis officer, Dr. Stephen Rowland, does not accept the conclusion of the Medical Research Council that phthisis is especially prevalent in the boot and shoe industry, and instances the fact that the phthisis

death-rate for Northampton is the same as that of the whole country. In a recent issue it was pointed out, however, that Sheffield has the lowest death-rate from phthisis of the 17 towns with a population exceeding 200,000, in spite of the proneness of the grinder to develop phthisis. One is led to the conclusion that apart from these two trades conditions of life in both Sheffield and Northampton are less liable to produce phthisis than the average conditions of other towns.

Paisley.

Dr. G. V. T. McMichael says the exceptionally high death-rate was due to the excessive prevalence of diseases affecting the respiratory system, such as pneumonia, bronchitis, influenza, measles, and whooping-cough. Arrangements have now been made for Paisley to use the West Renfrewshire Small-pox Hospital, thus enabling the Gockston Hospital to be reserved solely for tuberculosis. Dr. McMichael favours the home treatment of mild cases of scarlet fever, thus leaving hospital accommodation for more serious diseases, such as acute pneumonia, measles, and whooping-cough. Of the 23 maternal deaths associated with childbirth, four were assigned primarily to tuberculosis and three to influenza. The incidence of rickets in Paisley is steadily rising and the rise was specially marked during 1923 and 1924. Dr. McMichael attributes the rise to the distressing economic conditions and the lack of a sufficiency of milk for infants and young children. When the Russell Institute is opened, facilities for the treatment of rickets by artificial sunlight will be available. The Scottish Board of Health has expressed its appreciation of the work of the Barshaw Maternity and Child Welfare Hospital. Dr. McMichael suggests that some public-spirited citizen should come forward and erect a convalescent home for young children. The very large proportion of houses of one or two rooms in Paisley makes the work of the tuberculosis dispensary very difficult. Thus, of 170 notifications of tuberculosis investigated during the year, 111 patients shared a bed, 37 had a bed to themselves but shared a room, and 22 cases had a room to themselves. The housing difficulties are still further brought out by the birth records. Thus there were 420 births in one-roomed houses and 783 in two-roomed houses. Further, there were eight births in one-roomed houses where the parents were lodgers, and 170 births in two-roomed houses where the parents were lodgers. The total number of births during 1924 was 1893.

Warrington.

Dr. G. W. N. Joseph reports that the scheme for obtaining a water-supply from North Wales did not materialise and that a joint committee representing many water authorities in South-West Lancashire, with a representative of the Ministry as chairman, is considering the water requirements of this area, and how such requirements can best be met. There were 13 notifications of encephalitis lethargica with seven deaths. During 1924 66 new houses were built by private enterprise, none by the local authority. One hundred and eight municipal houses, however, are in course of erection and expected to be tenanted during 1925. Many applicants on the waiting-list for houses are purchasing houses erected by private enterprise and taking advantage of the Small Dwellings Acquisition Act. Of the 1662 applicants on the waiting-list there are 735 living in overcrowded houses. The committee have not been able to deal at all with 216 applicants who live outside the borough but are working in Warrington. Ninety-two tenants of corporation houses have received permission to take lodgers, but it is pointed out that all the houses concerned have three bedrooms and that there is no overcrowding. There were 88 samples of milk examined bacteriologically and seven were found to contain tubercle bacilli; five of the cows which were giving tuberculous milk were found and dealt with.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED SEPT. 19TH, 1925.

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 28; scarlet fever, 1888; diphtheria, 953; enteric fever, 91; pneumonia, 578; puerperal fever, 29; cerebro-spinal fever, 3; acute poliomyelitis, 13; acute polio-encephalitis, 1; encephalitis lethargica, 40; dysentery, 12; ophthalmia neonatorum, 94. There were no cases of cholera, plague, or typhus notified during the week.

Deaths.—In the aggregate of great towns, including London, there were 3 deaths from enteric fever, 12 from measles, 9 from scarlet fever, 40 from whooping-cough, 26 from influenza, and 35 from diphtheria. There were 220 deaths of children under 2 years from diarrhœa and enteritis, as compared with 219, 230, 218, and 177 in the preceding weeks. In London itself the deaths from diarrhœa and enteritis in children under 2 years numbered 55, as compared with 43, 38, 40, and 28 in the preceding weeks; there were 7 deaths from diphtheria, 5 from whooping-cough, and 7 from influenza.

Obituary.

JAMES WILLIAM RUSSELL, M.D. CAMB., F.R.C.P. LOND.

James William Russell, whose death occurred on Sept. 20th at Hay Tor, Devonshire, was senior physician to the General Hospital, Birmingham, and joint professor of medicine at the University. Born in 1863 into a well-known Birmingham family closely connected with the medical profession, and educated at the Edgbaston Proprietary School, he went up to Cambridge where he graduated with honours in mathematics and took his M.A. degree in 1890. His medical studies were continued at Queen's College, Birmingham, and Guy's Hospital. Qualifying in 1890 with the M.B., B.Ch. Camb., he obtained the M.D. in 1893 and in the same year became a Member of the Royal College of Physicians of which he was elected a Fellow in 1905. After filling the posts of resident obstetrician and house physician at Guy's Hospital he returned to Birmingham as resident medical officer to the General Hospital in 1891, and 15 months later became assistant physician. He had an unusually long wait before becoming full physician in 1912. For several years he was assistant to the chair of medicine at the University, and subsequently became joint professor of medicine, a post which he held to the time of his death.

The number of consulting posts he held at hospitals in the Midlands testifies to the wide regard paid to his eminence as a physician. He was consulting physician to the Birmingham and Midland Ear and Throat Hospital, the Royal Institution for the Blind, the Midland Counties Asylum, the Sutton Coldfield Cottage Hospital, the Nuneaton Hospital, the Guest Hospital, Dudley, the Smallwood Hospital, Redditch, and the Corbett Hospital, Stourbridge. He served a term on the Council of the Royal College of Physicians and was one of the examiners for the Conjoint Board. Locally, he had a special interest in the Birmingham Medical Benevolent Society.

Although he was not a voluminous writer, he at one time edited the *Birmingham Medical Review*, and was on the editorial board of the *Quarterly Journal of Medicine*. From the fullness of his knowledge he could have contributed much to medical literature, but his characteristic modesty and self-criticism prevented publication until the material had been worked up in great detail and he had subjected it to every possible criticism. It is not sufficiently recognised that he was the first in this country to describe a case of polycythæmia rubra. In a paper published in THE LANCET, Feb. 22nd, 1902, under the title of "An Unexplained Condition of Chronic Cyanosis," he gave the details of a case which he had watched for ten years and of three similar cases recorded by others. He pointed out that the condition was a distinct clinical entity. Osler's well-known paper did not appear until a year later. He was

especially interested in nervous diseases and published papers on chorea and epilepsy. In a paper in THE LANCET, 1904, he gave the after-history of many cases of gastric ulcer with the object of deciding the criteria for surgical interference. More recently he had been interested in the problems of renal disease, and published in the *Quarterly Journal of Medicine*, January, 1923, a noteworthy study of orthostatic albuminuria by means of graphic records, based upon his Ingleby Lectures delivered in the University of Birmingham the previous year. He reached the conclusion that there was a group of mild kidney lesions which revealed themselves chiefly by the inability of the kidney to bear, without leakage of albumin, the circulatory disturbance brought about by the upright position, and that the orthostatic albuminurias belong to this group though at its mildest extremity. Some further studies on this subject are embodied in a paper which appears elsewhere in this issue of THE LANCET.

Apart from his professional interests, he had two great sources of pleasure and recreation—music and mountains. He was a violinist above the average and was one of the chief promoters of the promenade concerts at the Theatre Royal, Birmingham. Even greater was his love of mountains. Initiated by his uncle, Sir Alfred Wills, whose first ascent of the Wetterhorn in 1854 was the beginning of the sporting side of mountaineering, he became in his younger days an expert rock climber. He never made any ice climbs, but except during the war there were few years that he did not visit the Alps. His career was unfortunately interfered with at times by spells of ill-health. During his undergraduate days he was a martyr to asthma, and although this became less after his return to his native town, the demands of a large consulting practice, and especially the added strain during the war of his work at the 1st Southern General Hospital, to which he was attached as major, R.A.M.C.T., were too much for his spare frame; signs of pulmonary tuberculosis showed themselves and necessitated a prolonged rest. Although he recovered he was obliged to restrict his practice and take precautions to avoid the attacks of bronchitis and asthma to which he became subject in recent years.

By the University and General Hospital his loss will be greatly felt, as in an unobtrusive way his devoted service, high ideals, and intellectual capacity did more than he ever realised to guide policies and influence conduct. Among a number of letters we have received one signed "General Practitioner" speaks of unselfishness carried to a fine art and uncompromising devotion to principle. His colleagues and a wide circle of doctors and patients mourn the loss of a courageous and inspiring friend. Dr. Russell was unmarried, and to his two surviving sisters we offer sincere sympathy.

LIVERPOOL PSYCHOLOGICAL SOCIETY.—The third session of this Society will begin on Oct. 6th, when Mr. G. C. Field, the President, will deliver his inaugural address at the University. The proceedings of the Society are of a strictly scientific character, and due prominence is given to the medical and psycho-analytical aspects of the subject; an unusually interesting syllabus has been arranged for the winter. Particulars may be obtained from the Secretary, the University, Liverpool.

DONATIONS AND BEQUESTS.—The governors of the Royal Manchester Children's Hospital have received £1893 from the Manchester and Salford Medical Charities Hospital Sunday Fund, and a legacy of £1000 to endow "the Eliza Entwistle cot."—Mr. John Stephen, of Hessle, Yorks, bequeathed £2000 to the University of Aberdeen, "in memory of a happy boyhood spent in that city," for scholarships, and £2000 "in memory of a happy life spent in my adopted city of Kingston-upon-Hull, for the endowment of university scholarships to boys from Hymers College, Hull."—Towards the £500,000 required for rebuilding part of the Middlesex Hospital, £204,600 has been raised. Recent gifts include £500 from the Hon. John Nivison, £250 from the Middlesex Hospital Club, £105 from Messrs. D. H. Evans and Co., Ltd., £100 from Lady Salomons, and £100 from Messrs. Chappell and Co., Ltd.

Correspondence.

"Audi alteram partem."

THE REGULATION OF NURSING HOMES.

To the Editor of THE LANCET.

SIR,—In view of the introduction last February by Mr. Gerald Hurst, K.C., of the Nursing Homes Registration Bill (England) promoted by the College of Nursing, it may be useful to record experience in Johannesburg in which, with its large boarding-house and flats population, the demand for nursing homes is very considerable. It is, of course, essential that such places be properly constructed, equipped, and administered. The writer is unaware, however, of any English standard of arrangements, though a paper containing certain suggestions and plans for high-class private hospitals and clinics was published in THE LANCET[1] in 1922 by Sir Holburt Waring, of St. Bartholomew's Hospital. He stated, as regards London, that "for the most part our so-called private hospitals and nursing homes are merely adapted second-class private dwellings," and concluded with the interesting observation:—

> "It has always seemed strange to me in connexion with English people that they are quite prepared, when they have money and wish to take a holiday, to hire two or three rooms in a hotel of the best kind they can afford. But, if it so happens that they are ill and require serious medical or surgical attention, they are often quite prepared to go into what is little better than a third- or fourth-class lodging-house in a back street where the necessary surgical or medical advice and treatment are carried out."

In 1911 Johannesburg took powers to make by-laws as to municipal licensing, water-supply, sanitary requirements, separate accommodation for staff, and mortuary provision. These by-laws, believed to be the first of their kind, were sanctioned in 1914, and their enforcement quickly secured much-needed betterment. In 1922 the Union Government published regulations under the Public Health Act, 1919, S. 135 (2), dealing especially with Government registration, medical inspection, and the keeping of a detailed register of patients. Thereafter, at the request of the Government, the writer undertook a systematic inspection of nursing homes, some 37 in number, under systematised headings. No responsibility was, however, accepted as to the conduct of these places.

In the course of inquiry as to sanitary conveniences, prompted by disastrous personal experience many years ago at the hands of a certificated nurse, special attention was directed to the cleansing of bed-pans. In only five of the homes was satisfactory slop-sink and sluice provision made. In several cases it was admitted by highly trained English and South African nurses that the bath was used for cleansing and rinsing purposes. This is obviously and specially likely to occur where the water-closet is situated alongside the bath. In other respects the results of inspection were rather surprisingly satisfactory. The replacement of numerous adapted "second-class private dwellings" (usually small bungalows) by buildings of modern design and equipment may in some cases be preferable; but this, like technical equipment, quality of cooking, standard of nursing, attendance, and tariffs, is largely a question of demand, supply, and competition, which can hardly be dealt with by regulation. Nursing homes should certainly be in a state of good structural repair, possess a sufficiency of private open space or garden, be provided with water carriage wherever practicable, and, without any exception, possess adequate and approved slop-sink and sluice provision on each nursing floor. Sufficient and, in the larger homes, separate bathing and sanitary conveniences should be available for patients and staff; in no nursing home should a sanitary convenience be permitted in a bathroom. Licensees should be supplied with, and produce on

[1] THE LANCET, 1922, ii., 697.

demand, an authorised schedule of the number of beds permitted in each room, and should not be overburdened with record-keeping, if only to induce them to keep their essential register with reasonable diligence and accuracy. In regard to *standard of nursing*, 54 per cent. of the staff were certificated generally and in midwifery, 15 per cent. in midwifery only, 9 per cent. were probationers, and 23 per cent. were untrained.

As a result of this inspection, the existing 1915 municipal by-laws were revoked to be replaced by the regulations which I here append.

I am, Sir, yours faithfully,

CHARLES PORTER, M.D. Irel., D.P.H. Camb.,
Medical Officer of Health, Johannesburg.

August 1st, 1925.

NEW REGULATIONS.

57. 1. No premises shall be licensed as a private hospital or nursing home if such premises are being used, or are intended to be used, for any other purpose; nor

(1) Unless the buildings, including out-offices, (*a*) are in good repair and in a cleanly and wholesome condition; (*b*) possess a sufficient supply of good water, free from liability to pollution; (*c*) are, where sewerage is available, connected therewith; (*d*) have within the curtilage such garden area or open space as may in the circumstances be reasonable.

(2) Unless there be provided (*a*) not less than 100 square feet floor space and 1200 cubic feet of free air-space for all infectious and serious operation cases, and not less than 75 square feet and 800 cubic feet of free air space for all other cases; (*b*) adequate accommodation for nursing and attendants separate from the accommodation for patients; (*c*) water-closets in the proportion of 1 to every 15 beds for patients, or, when sewerage is not available, pail-closets in the proportion of 1 to every 8 such beds; (*d*) where the number of beds for patients exceeds 10, separate closet accommodation for the staff in the same proportion as in par. (*c*) hereof; (*e*) upon every floor upon which patients will be accommodated, an approved slop-sink or "sluice" with water-tap, flushing cistern, flushing rim, and hot and cold water laid on, and arrangements for the satisfactory disposal of sewage therefrom; (*f*) separate closet accommodation for any native or natives resident or employed on the premises; (*g*) slipper-baths with hot and cold water laid on in the proportion of 1 bath for every 15 beds for patients, and, where the number of such beds exceed 15, separate bath accommodation for the staff, no closet or slop-sink or "sluice" to be constructed or permitted to remain in any bathroom; (*h*) a suitable outside room in connexion with such private hospital or nursing home for use as a mortuary chamber.

2. No licensee of a private hospital or nursing home shall fail to display prominently on the door of each room intended for the accommodation of patients the number permissible in such room in terms of Subsection 1 (2) hereof.

58. No licensee of a private hospital or nursing home shall himself or by his servant or agent contravene or fail to comply with or to maintain any of the conditions, provisions, or requirements specified in by-law 57 hereof.

"SMALARINA" IN MALARIA.

To the Editor of THE LANCET.

SIR,—Prof. Cremonese's monograph was not unknown to us, but we must confess to some difficulty in following his pathology and in admitting some of his suppositions. The patients of whom we wrote, when placed on quinine and arsenic treatment, made the *usual* progress—no worse, no better, than the numerous patients suffering from malaria admitted to the Hospital for Tropical Diseases during the past several years. These patients appear to us to afford adequate control for the purpose of clinical judgment. "Smalarina" may or may not be of use as *an aid* to quinine; our few cases were insufficient perhaps wherefrom to judge, but we did not find any beneficial result from its use.

Anyone interested in this subject might refer to "Smalarina Cremonese" published by the Bureau pour l'Encouragement a l'Emploi de la Quinine, Amsterdam.—We are, Sir, yours faithfully,

G. C. LOW.
A. L. GREGG.

Brook-street, Grosvenor-square, W., Sept. 29th, 1925.

PERSISTENT DIARRHŒA IN PHTHISIS.

To the Editor of THE LANCET.

SIR,—In your issue of Sept. 26th Dr. H. de Carle Woodcock draws attention to the persistent diarrhœa which is such a serious complication of phthisis. Apart from actual tuberculous enteritis, I believe that the usual cause is the achlorhydria which is a very frequent sequel to phthisis. Permin[1] gave test-meals in 658 cases and found that free hydrochloric acid was absent in 23 per cent. in the "first stage," 34 per cent. in the "second stage," 47 per cent. in the "third stage," and in 75 per cent. of those who died within six months of the examination. It is a familiar fact that achlorhydria is the most common cause of chronic and recurrent diarrhœa in non-tuberculous patients, and that this can be rapidly and completely cured by the use of hydrochloric acid. Similarly, the rational treatment of the diarrhœa of phthisis is to administer the acid in adequate doses. The large dose required in such conditions as Addison's anæmia is unnecessary. As a rule, between 30 and 60 minims taken with each meal is sufficient to control the diarrhœa; this can be given as a medicine in 2 oz. of water, or more agreeably as a beverage in a glass of water with the addition of sugar and the juice of an orange or a lemon.

I am, Sir, yours faithfully,

ARTHUR F. HURST.

New Lodge Clinic, Windsor Forest, Sept. 28th, 1925.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: PROPOSED NEW CHARTER.

To the Editor of THE LANCET.

SIR,—The annual meeting of Fellows and Members on Nov. 19th next will be one of most unusual interest, as the College Council has decided to lay before it in their annual report the exact terms of the petition and of the proposed new charter which the said Council intends to lay before H.M. Privy Council at a date unpublished. I presume that this date will be subsequent to Nov. 19th, so that the Fellows and Members assembled on Nov. 19th can give the Council their views on the suggested admission of women to the same status as men, whether Fellows, Members, or Licentiates in Dental Surgery, and on other innovations contained in the new charter.

My Society will present to the meeting on Nov. 19th a resolution suggesting that advantage be taken to insert a clause giving Members direct representation on the Council of the College. This will, once for all, restore to the Members the position of which they were robbed by the iniquitous charter of 1843. Presidents of the College have expressed regret, more than once, that it is only by obtaining a new charter such justice could be done, and that this is a very expensive process. Now is the time to prove if this remark was sincere. It will be an opportunity which Members and democratic Fellows have been waiting for since my Society was founded in 1894; indeed, since the establishment of the previous Association in 1884.

You may be sure there will be a *very large* attendance in the College on Nov. 19th next. The theatre was crammed to the utmost in November, 1908, when the proposed admission of women to the examinations of the College was debated and the results of a postcard vote made known. This proposal was, I might add, negatived by a majority, but the Council, heedless of this verdict, soon after permitted women to come up for examinations, but having no share whatever in the management of the College. This restriction the Council now proposes under the new charter to remove, *but not to take a poll* of the Fellows and Members.

[1] G. E. Permin: Internat. Beitr. z. Path. u. Ther. d. Ernährungsstör, I., Hft. 2.

This, however, is not the only "shot in our locker." We have been assured by the clerk of H.M. Privy Council that when the College Council's petition and proposed charter arrive before *his* Council, "an opportunity will be afforded to persons interested to bring a counter-petition." My Society will not fail to do so, and we are already taking steps to secure legal aid of the highest class to present ably our just cause and to support strongly a counter-petition on behalf of the 17,000 Members.

I am, Sir, yours faithfully,

SIDNEY C. LAWRENCE, M.R.C.S. Eng.,
Hon. Sec. of the Society of Members of the Royal College of Surgeons of England.

Sept. 21st, 1925.

RHEUMATISM AND RADIO-ACTIVE WATER.

To the Editor of THE LANCET.

SIR,—I have read with interest the figures given in the Ministry of Health's report on the prevalence of rheumatism. Treatment with radium emanations is the basis of successful treatment at all the famous spas in the world, and I personally consider that an immediate investigation into the possibilities of a national treatment of rheumatic patients by radio-active water would be of more practical value than the issuing of reports. Radio-active waters in these days are easy to produce; in fact, British manufacturers have now achieved the means of producing a water in the ordinary household which is considerably more potent in radio-activity than those of any of the continental spas and answering to the severest tests of the Curie Institute of France.

I am, Sir, yours faithfully,

E. DUNBAR TOWNROE, M.R.C.S.Eng., D.P.H.

Sloane-street, S.W., Sept. 23rd, 1925.

LUMINAL AND THE TREATMENT OF EPILEPTIC FITS OCCURRING AT ADOLESCENCE.

To the Editor of THE LANCET.

SIR,—The outlook of young people who have led healthy lives till they reach the age of early manhood or womanhood, and who then start having epileptic fits has been little improved by the wholesale drugging and dulling effects of maximum doses of bromides with attendant gastric disturbances. The trial of luminal in such cases seems indicated from the accumulating evidence, and the following two cases of epileptic fits occurring at adolescence may be of clinical interest.

Mr. K. I., aged 28, healthy history till age of 18, started having fits, at first of mild character, occurring once or twice a week. The severity and number of the fits increased till they became of daily occurrence, more especially during the early part of the morning. He was put on maximum doses of bromide, which did not, however, check the fits. He became very morose and depressed. On Dec. 28th, 1924, he was started on luminal, 1½ gr., twice daily. He has had no fits since that date, and except for feeling a little drowsy for the first few days he now leads a normal existence, and is in fact a different man.

Miss V. M., aged 27, a sport-loving girl, did war work and had a nervous breakdown owing to strain. A legacy of typical epileptic fits was the sequel. These fits were more frequent and severe just before her menstrual flow every month, the latter becoming irregular. She became very apathetic and dull. Bromide in maximum doses combined with salt-free diet had no effect on the fits. Four months ago she was given luminal, 1½ gr., twice daily; a fortnight after she had a slight "giddy turn" just when her menstrual period started, since when she has had no return of fits, and now is able to take interest in her work.

The similarity of age and onset of the above cases and the cessation of fits with luminal and the absence of after-effects would seem to make the more extensive use of this drug in similar cases worthy of trial, more especially in general practice.

I am, Sir, yours faithfully,

O. G. MISQUITH, M.A. Camb., M.R.C.S. Eng.

Chandler's Ford, near Southampton, Sept. 26th, 1925.

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—Will you allow us through the columns of THE LANCET to disclaim all responsibility for paragraphs which have appeared in the public local press concerning us? Not only have such references been unsought by us, but they have caused us great distress, and have in every way been actively opposed by us.—We are, Sir, yours faithfully,

D. JUSTIN DAVIES.
LUCY S. DAVIES.

Leicester, Sept. 28th, 1925.

THE DENTAL EXHIBITION.

THE International Exhibition, held at the Imperial Institute, South Kensington, from Sept. 28th to Oct. 2nd, again reflects the mechanical ingenuity which has been applied to dentistry. It is hardly the fault of inventors that striking novelties are far to seek amongst the maze of machines, appliances, and preparations.

The Pepsodent Toothpaste Company, of 42, Southwark Bridge-road, S.E. 1, show their Decoater tooth-brush, which is smaller and more efficient than most popular models; but the design of tooth-brushes is worth far more thought than has been given to it. Amongst tooth-pastes shown are the well-known Kolynos, Euthymol, and Crown brands. Each has undoubted merits which hardly require recapitulation; amongst those of the last is said to be a taste of fruit which makes its use less irksome to ladies and children. There is also exhibited a French dentifrice called Sanogyl, which is used in pyorrhœa and contains novarsenobenzol. Its virtue is supposed to lie in action against specific spirochætes causing pyorrhœa.

Local anæsthetics naturally receive much prominence. W. R. Black, of Vere-street, Birmingham, shows a new preparation called Isocaine, in addition to his well-known product Nopaine. Isocaine is said to be seven times less toxic than cocaine, without being irritant. C. J. Plucknett and Co., of 29, Poland-street, W. 1, exhibit their Sanpeine, which has no cocaine in it, and the Amalgamated Dental Co. have a cocaine preparation called Antipain, which has been in use for ten years. Similarly well established is Patterson's Local Anæsthetic, of which steadily increasing sales are reported by the Palatine Dental Manufacturing Co., of 5, High-street, Manchester, and Anodoon, 20 years old, which is prepared by the Glasgow Dental Depôt, Ltd. This firm also shows useful flasks and flask clamps and a satisfactory form of articulator. The Hoffman-La Roche Chemical Works, Idol-lane, E.C. 3, strongly recommend their sedative, analgesic and hypnotic, Allonal; it is a barbituric acid derivative, intended to be given before and after operations.

Several firms, including the Palatine Dental Manufacturing Co., exhibit a new preparation named Nugum, which is "a plastic coral for perfectly natural dentures," and can be vulcanised like rubber in an ordinary vulcaniser. Of artificial teeth there are excellent displays by many firms, including the Dental Manufacturing Co., Courtin and the International Tooth Co., and the S. S. White Co.—all of London. Dentures of gold-covered vulcanite are shown by the Gold-Sealed Denture Process, Ltd., 9, Golden-square, W. 1. Many firms show beautifully finished instruments, amongst which may be mentioned the Rayway Dental Unit of Norman Rayne, Ltd., 48, New Cavendish-street, W. 1. Gould and Co., of Agol House, Mount Pleasant, Liverpool, show their Agol equipment and preparations, and the Amalgamated Dental Co. have efficient gas-and-oxygen apparatus, and a new adjustable spot-lamp. They also exhibit their excellent Solila hypodermic needles, made of rustless steel, and a new small adjustable gag. Cottrell and Co., of 15, Charlotte-street, W. 1,

demonstrate an automatic rubber packing and wax dispersing apparatus and Dr. Oberlander's process of enamelling dentures.

Baillière, Tindall and Cox, who publish the *Dental Surgeon*, display books on dentistry; so also does Henry Kimpton, of 263, High Holborn, W.C. 1. Amongst smaller items are the Lysepticol mouth-wash tablets, of the Midland Dental Manufacturing Co., Birmingham; the chlorine antiseptic, Chloramine, of W. R. Black, and the new iodine solution, Presoiod, sold by Lionel Cooper, 14, Henrietta-street, W.C. 2. A small cheap sterilising lamp, burning solid fuel, which is made by Francis Lepper and Co., of 55, Great Marlborough-street, W. 1, has found many buyers. Last, but far from least in helpfulness, is the glass of hot virolised milk provided for visitors.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Demonstrations of specimens in the Museum will be given at 5 P.M. during October and November in the theatre of the College in Lincoln's Inn-fields, as follows: By Prof. Sir Arthur Keith: Friday, Oct. 16th, Specimens Illustrating the Pathological Anatomy of Acromegaly; Oct. 23rd, Preparations and Models to Illustrate the Mechanism of the Internal Ear; Oct. 30th, Preparations and Dissections to Illustrate the Evolution of the Human Mechanism of Hearing; Nov. 6th, Exhibition of Microscopical Preparations made from Recent Cases of Intestinal Stasis. By Mr. Shattock: Monday, Oct. 19th, Lips and Tongue; Oct. 26th, Cysts; Nov. 2nd, Some Bone Tumours. The demonstrations are open to advanced students and medical practitioners.

CHELSEA CLINICAL SOCIETY.—The annual dinner of the society will be held at the Café Royal, Regent-street, W., on Tuesday, Oct. 20th, at 7.30 P.M.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—On the occasion of the opening of the eighty-fourth session of the School of Pharmacy at 17, Bloomsbury-square, London, W.C., on Wednesday, Oct. 7th, Prof. Winifred C. Cullis will deliver the inaugural sessional address, and the Pereira medal will be presented.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.—The old students' dinner will take place at the Hotel Victoria, Northumberland-avenue, W.C., on Friday, Oct. 30th, at 7.30 P.M. The chair will be taken by Mr. Samuel Osborn. On Monday, Nov. 2nd, at noon, H.R.H. the Duke of York will lay the foundation-stone of the College House extension. The ground and first floors of this building, which is being erected opposite the hospital in Lambeth Palace-road, will house the students' club premises, whilst the upper four floors will provide resident accommodation for some 60 students, in addition to members of the resident staff of the hospital.—The following scholarships have been awarded by the school: Entrance Arts Scholarships, 1925 (value £50), Mr. A. G. Sanders, St. Paul's School, West Kensington; (value £50), Mr. J. F. E. Bloss, Monkton Combe, Bath. Entrance Science Scholarships, 1925 (value £150), Mr. K. M. Robertson, Eltham College; (value £60), Mr. D. O. Clark, Eltham College. The William Tite Scholarship, 1925 (value £25), Mr. A. M. Easton, Whitgift Grammar School, Croydon.

POST-GRADUATE COURSE AT ST. MARY'S HOSPITAL.—A series of lectures will be given at St. Mary's Hospital over the present week-end, starting on Saturday, Oct. 3rd at 11 A.M. The course will be open to all practitioners without fee, and the following lectures will be given: Saturday, 11 A.M., Mr. C. W. G. Bryan: The Management of Common Forms of Urinary Obstruction; noon, Mr. S. Maynard Smith: The Differential Diagnosis of Gall-Stones; 2.30 P.M., Mr. T. G. Stevens: Hæmorrhagic Ovarian Cysts, a Common Cause of Pelvic Pain; 3.45 P.M., Dr. C. M. Wilson: The Patient's Point of View in Treatment (with cases). On Sunday, 11 A.M., Mr. Zachary Cope: Minor Surgery in General Practice; noon, Prof. B. J. Collingwood: Some Applications of Physiology in Practice. On Monday, 10 A.M., Mr. Warren Low: Clinical Aspects of Malignant Disease of the Colon; 10.45 A.M., Prof. Langmead: Overlooked Causes of Fever in Children; noon, Mr. Aleck W. Bourne: Clinical Types in Gynæcology; 2.30 P.M., Sir William Willcox: Chronic Toxæmia, its Recognition and Treatment; 3.45 P.M., Mr. Duncan Fitzwilliams: Lecture and Demonstrations on Cancer of the Breast.

CALEDONIAN MEDICAL SOCIETY.—The fortieth annual meeting and dinner of this society will be held at the Central Station Hotel, Glasgow, on Friday, Oct. 9th, under the presidency of Dr. Neil T. Kerr, of Hartwood.

HUNTERIAN SOCIETY.—The presidential address to the society will be given by Dr. F. Howard Humphris at a dinner meeting in Simpson's Restaurant, Cheapside, E.C. 2, on the subject of Light. The date of the meeting is Oct. 19th, at 7.30 P.M., and not Oct. 12th as announced in the society's calendar.

CHARING CROSS HOSPITAL MEDICAL SCHOOL.—The annual dinner of past and present students will be held in Gatti's Restaurant, Strand (entrance, King William-street), on Monday, Oct. 5th, at 7 for 7.30 P.M. Dr. W. J. Fenton will be in the chair. The distribution of prizes to students by Sir Herbert Waterhouse will take place on the afternoon of the same day at 3.30 in the out-patients' hall of the hospital.

HARVEIAN SOCIETY OF LONDON.—The subject selected for the Buckston Browne prize is the Ætiology of High Blood Pressure and of the Respiratory Phenomena Associated with High Blood Pressure and Chronic Nephritis. The prize consists of a medal, together with the sum of £50, and it is open for competition to any member of the medical profession registered in the British Isles or Dominions, under 45 years of age. Further particulars may be seen in our advertisement columns.

BRITISH SCIENCE GUILD.—The first annual Norman Lockyer Lecture, established by the British Science Guild as a means of periodically directing the attention of the public to the influence of science upon human progress, will be given by Sir Oliver Lodge, F.R.S., on the Link Between Matter and Matter, and the lecture will be held on Monday, Nov. 16th, at 4 P.M., in the Hall of the Goldsmiths' Company (by permission of the Master and Court of Assistants of the Company), Lord Askwith, President of the Guild, in the chair. Tickets of admission may be obtained on application to the Secretary, British Science Guild, 6, John-street, Adelphi, London, W.C. 2.

MEDICAL DEFENCE UNION.—The annual general meeting of the Medical Defence Union was held at 49, Bedford-square, London, on Sept. 25th. Mr. Walter G. Spencer, the President, in moving the adoption of the annual report of the Council for the year 1924–25, said that the report was certainly one of the most satisfactory and successful which had ever been issued. The increase of members during the past two or three years was quite unprecedented, and no doubt this was largely due to the fact that the teachers in the medical schools were now making a point of telling the newly-qualified to join one or other of the defence societies. Mr. F. C. Larkin, Mr. D. Drew, and Dr. V. A. Jaynes were unanimously re-elected members of the Council.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.—A post-graduate course will be held at the Hospital, Queen-square, Bloomsbury, W.C., from Oct. 5th to Nov. 27th. The course will consist of the following subjects: (1) Out-patient clinics, Mondays, Tuesdays, Thursdays, and Fridays, 2 P.M.; (2) clinical lectures and demonstrations on the same days at 3.30 P.M.; (3) lectures on the anatomy and physiology of the nervous system (if sufficient applicants), Mondays, 12 noon; (4) lectures on the pathology of the nervous system, Thursdays, 12 noon; (5) clinical demonstrations on methods of examination (if sufficient applicants), Tuesdays and Fridays, 10 A.M. A syllabus and further particulars of the course may be obtained from the secretary of the hospital.

ROYAL INSTITUTE OF PUBLIC HEALTH.—A course of lectures on Preventable Diseases will be delivered in the Lecture Hall of the Institute, 37, Russell-square, London, W.C. 1, at 4 P.M., on Wednesdays from Oct. 14th to Dec. 16th. Colonel S. Lyle Cummins, David Davies Professor of Tuberculosis, University College of South Wales and Monmouth, will deliver the first lecture on the Prevention and Arrest of Tuberculosis, on Oct. 14th, with Lieut.-Colonel Cuthbert James, M.P., in the chair. Whilst these lectures are intended primarily for the Fellows and Members of the Institute, all others, men and women, interested in medico-sociological problems are cordially invited to attend. The Harben Lectures will be given by Prof. J. C. G. Ledingham, F.R.S., on Current Problems in Bacteriology and Immunology, and their bearing on Public Health Effort, on Dec. 9th, 10th, and 11th, at 5 P.M. A copy of the syllabus may be obtained from Dr. E. W. Hope or Dr. T. N. Kelynack, hon. secretaries, at the Institute.

THE winter session of the James Mackenzie Institute for Clinical Research, St. Andrews, will open on Tuesday, Oct. 6th, at 4 P.M.

THE resignation is reported of Sir Henry Gray from the chief surgeoncy of the Royal Victoria Hospital, Montreal.

Dr. Basil Graves, who has recently been appointed surgeon to the St. Paul's Eye Hospital, Liverpool, has been given leave to enable him to deliver a series of advanced clinical courses on Special Methods and Principles of Technique employed in Microscopy of the Living Eye, at the Bellevue Department of Ophthalmology, New York University.

QUEEN'S UNIVERSITY (BELFAST) CLUB, LONDON.—The annual business meeting and autumn dinner of the club will be held at 7 and 8 P.M., respectively, on Thursday, Oct. 15th, at the Connaught Rooms, Great Queen-street, W.C. 2. Members of the University wishing to join the club should communicate with the Honorary Secretaries at 132, Harley-street, W.

CONFERENCE ON LIBRARIES.—The Conference held by the Association of Special Libraries and Information Bureaux at Oxford was attended by over 200 delegates, representing many countries. It was stated that there are over 25,000 scientific periodicals, and it is obvious that organisation is needed. Miss A. L. Lawrence, of the British Medical Association, discussed the coördination of medical information, and Dr. Kentish Wright, of the Ministry of Health, gave particulars of the intelligence service at the Ministry.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY. Some three or four years ago Whitehaven Castle, one of the seats of the Earl of Lonsdale, was bought privately and, together with £20,000 to cover the cost of alterations, presented to the governors of the Whitehaven and West Cumberland Infirmary. The alterations are now nearly completed, and the new hospital will shortly be opened by Princess Mary. When Sir John Lowther bought the building in 1675 from Sir George Fletcher it was called Flatt House, but was subsequently re-edified and re-named Whitehaven Castle.

ROYAL VICTORIA HOSPITAL, BELFAST.—It is estimated that the large extensions now in progress, portions of which are already completed and in working order, will cost approximately £125,000. Twenty years ago the expenditure of the hospital, which is the medical school of the University, was £14,000; last year it was £53,000; this year it will be £63,000. The income is now inadequate to the extent of over £10,000, and an offer has been made of a contribution of £1000 conditional upon nine similar contributions. The extensions comprise three additional wards to hold 80 beds, a six-floored nurses' home, which will house the whole of the nursing staff, and two new clinical theatres. An entire floor is being adapted as a dental clinic.

Appointments.

CRAIB, M., M.D., Ch.B., has been appointed Resident Medical Officer for Frere Hospital, East London, South Africa.

GRAVES, B., M.R.C.S., L.R.C.P. Lond., Surgeon to St. Paul's Eye Hospital, Liverpool.

O'CONNOR, BRYAN V., M.R.C.S. Eng., L.R.C.P. Lond., Resident Medical Officer, General Hospital, Jersey.

PLATT, H., M.D., M.S. Lond., F.R.C.S. Eng., Consulting Orthopædic Surgeon to the Devonshire Hospital, Buxton.

TROUP, G., M.D. Aberd., D.P.H., Medical Superintendent, Willesden Municipal Hospital.

Ashton-under-Lyne Board of Guardians: WHITE, L., M.R.C.S., L.R.C.P. Lond., Medical Superintendent, non-resident; RALPHS, F. G., M.B., Ch.B. Manch., Surgeon, non-resident; and EVANS, G. I., Assistant Medical Officer, resident.

Vacancies.

For further information refer to the advertisement columns.

Belgrave Hospital for Children, 1, Clapham-road, S.W.—H.S. and Asst. H.P. Each at rate of £100. Also Asst. S. 50 guineas.

Bermondsey Infirmary, Lower-road, Rotherhithe, S.E.—Jun. Asst. M.O. £400.

Birmingham, City Mental Hospital.—Asst. M.O. £350.

Brighton, Royal Sussex County Hospital.—H.S. £150. Also Surg. Clin. Asst.

Cambridge, Addenbrooke's Hospital.—Cas. O. and Res. Anæsthetist. At rate of £130.

Cardiff Royal Infirmary.—Ophth. H.S. At rate of £50.

Central London Throat, Nose, and Ear Hospital, Gray's Inn-road, W.C.—Hon. Asst. Out-patient Registrar.

Delhi, India, Lady Hardinge Medical College and Hospital.—Radiologist. Rs.750.

Holland County and Boston Borough Education Committee.—Dent. S. £450.

Hospital for Consumption and Diseases of the Chest, Brompton, S.W.—H.P. At rate of £50.

Hospital of St. John and St. Elizabeth, 40, Grove End-road, N.W.—H.P. and H.S. At rate of £100 and £75 respectively.

Hull City Education Committee.—Asst. Sch. M.O. £600.

Leicester Royal Infirmary.—Second Res. Anæsthetist. At rate of £200.

Lucknow University.—Prof. of Surgery. Rs.1200–50–1400.

Manchester Babies' Hospital, Burnage-lane, Levenshulme.—Two Hon. Phys.

Manchester Royal Infirmary.—Res. M.O. and Asst. M.O. At rate of £200 and £100 respectively.

National Hospital for the Paralysed and Epileptic, Queen-square, W.C.—Res. M.O. £200.

Northern Ireland Ministry of Home Affairs.—Med. Inspector. £500.

Paddington Green Children's Hospital, W.—H.P. and H.S. Each at rate of £150.

Portsmouth Royal Hospital.—Cas. O. At rate of £100.

Renfrew County.—Asst. Tub. O. £600.

Royal Chest Hospital, City-road, E.C.—Res. M.O. and H.P. At rate of £150 and £100 respectively. Also Phys. to Out-patients. £50.

Royal Free Hospital, Gray's Inn-road, W.C.—Sen. Res. M.O. £200.

Royal National Orthopædic Hospital, 234, Great Portland-street, W.—Registrar. 100 guineas.

Royal Northern Hospital, Holloway, N.—H.P. and H.S. At rate of £70. Also P.

Seychelles Government.—Asst. M.O. and Res. S. Rs.6500.

Southend-on-Sea County Borough.—Asst. M.O. £600.

Stockport Infirmary.—Sen. H.S. £250.

Winchester, Royal Hampshire County Hospital.—H.P. £150.

The Chief Inspector of Factories, Home Office, London, S.W., announces the following vacant appointments for Certifying Factory Surgeons: Looe (Cornwall), Shrewsbury (Salop), and Wylam-on-Tyne (Northumberland).

Births, Marriages, and Deaths.

BIRTHS.

ANDERSON.—On Sept. 24th, at Albyn-terrace, Aberdeen, the wife of William Anderson, F.R.C.S., of a son.

CROSSMAN.—On Sept. 16th, the wife of Dr. Francis Ward Crossman, Whites Hill, Hambrook, Glos., of a son.

DINGLEY.—On Sept. 25th, the wife of J. R. Dingley, M.B., B.S., Robertsbridge, Sussex, of a daughter.

MOLLAN.—On Sept. 23rd, at Staunton Lodge, Gosport, the wife of Captain F. R. H. Mollan, M.C., R.A.M.C., of a son.

VERCOE.—On Sept. 24th, at Old Court, Ealing, the wife of R. H. Vercoe, D.P.H., M.O.H. Chelmsford, of a son.

MARRIAGES.

MCCREA—WILLOCK.—On Sept. 25th, quietly, at Ottery St. Mary, Devon, Edward D'Arcy McCrea, F.R.C.S.I., M.Ch. Dub., to Edith Florence Willock, F.R.C.S.I., only daughter of Mr. and Mrs. W. A. Willock, Green Bushes, Budleigh Salterton.

MACKINNON—BAGNALL.—On Sept. 24th, at St. Mary's, Hammersmith-road, West Kensington, Archibald Donald Mackinnon, C.M.G., M.D., Kyleakin, Isle of Skye, to Sylvia Joan, widow of Lieut.-Colonel C. E. Bagnall.

DEATHS.

BROWN.—On Sept. 26th, at Preston Park, Brighton, Thomas Lloyd Brown, M.R.C.S., of Stonecroft, Cuckfield.

DAVIES.—On Sept. 23rd, at East Cliff Cottage, Bournemouth, Dr. William Morriston Davies, aged 83.

FOX.—On Sept. 27th, at Bradford-street, Walsall, George Martin Fox, M.D., D.P.H., J.P., in his 61st year.

KIRKNESS.—On Sept. 19th, at The Haven, Pembury, Tunbridge Wells, suddenly, of pneumonia following influenza, William Ronald Kirkness, M.R.C.S., L.R.C.P., eldest son of the late William Kirkness, of Falmouth, and of Mrs. Kirkness, Haslemere, Surrey.

THOMAS.—On Sept. 25th, suddenly, Hugh Mortimer Thomas, M.R.C.S., L.R.C.P. Lond., Tower Hill, Fishguard, aged 52.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

THE DEATHS OF MERCHANT SEAMEN IN 1923.

BY W. E. HOME, M.D., B.SC., D.P.H., M.R.C.P. EDIN.,
FLEET SURGEON, R.N. (RETIRED).

THE deaths of merchant seamen in 1923 are recorded in the Board of Trade's "Return of the Shipping Casualties to and Deaths on Vessels Registered in the United Kingdom" recently issued. The figures tabulated below may be compared with those previously published [1] for 1921 and 1922, but there is added a line, "equivalent for a single death," which correlates the death-rate per 1000 with the number of persons on which the figures are based, showing by how much any individual death affects the rate per 1000 in any group, such as the Lascars. The total numbers of men serving amongst whom the deaths occurred is once again not given in the report, but has been kindly supplied to me by the Board of Trade. It is only approximate, but no more accurate information is available. The same method of compilation has been used as before and it is probable that the errors are roughly constant from year to year. The death-rate for 167,794 British seamen in 1923 was lower than in 1922, and also lower in each of the three groups—alcohol, diseases, and accidents. This year there were 35 suicides, 32 men were lost through drink, 188 by casualties to their ships, and 362 by disease. There were 50 deaths from pneumonia, 29 from tuberculosis (a decrease of 17), 25 from malaria, and 19 from enteric fever. The 55,935 Lascars form the next largest group in the mercantile marine, and their gross death-rate of 8·01 is higher than in 1922, the main increase being in deaths from disease. There were 17 suicides; none were lost through drink, but 135 in casualties to their ships (73 in the *Okara*). Fifty-six died of pneumonia and 42 of tubercle, to which diseases they are more susceptible as a group. They also suffered more through casualties to ships and accidents on board, particularly from falls down hatchways and "missing at sea," but much less from accidents on shore, in which drink is apt to play a part. Foreign seamen (11,262), a smaller group, suffer most from accidents on board, tubercle, and circulatory and digestive diseases. In the whole mercantile marine there were no deaths in 1923 from plague, which was rather a triumph; but there was an increase of 7 from beri-beri and 21 from pneumonia. There were 14 fewer from tubercle; cancer deaths were at the same rate in British and Lascar seamen, and there were fewer accidents. It must be remembered, however, that these death-rates are only approximate, and that periods of irregular employment increase accidents, but, owing to the method of preparation of this return, will lower the apparent death-rates. In sailing ships (2456 men) the fatal accident-rate was 14·2, against 2·7 in steam (five times as high), and there were no deaths from either alcohol or disease. In the Royal Navy in 1922 accidents, pneumonia, and tubercle were the chief causes of deaths, and there was less malaria, enteric fever, and circulatory system disease than amongst British merchant seamen. The relative ages in the two groups unfortunately cannot be compared.

In 1924 the Royal Sanitary Institute represented to the Ministry of Health and to the Board of Trade that this classification of diseases was antiquated and should be remodelled, and that the compilation of death statistics and the care of the health of the men of the merchant service should be given in charge to the Ministry of Health, as the Board of Trade was not specially organised for this duty. The Prime Minister stated in March, three months before this return appeared, that the Board of Trade was "in close touch with the Ministry of Health on all matters affecting the health of seamen." Evidence of the effect of this "close touch" is not apparent in this return. The Board of Trade may have been in intimate association with the Ministry's medical advisers, but has presumably been unable to assimilate the wealth of scientific information they have offered. Tuberculosis is still not classified as an infectious disease, and the Board has not yet learned that figures of deaths are of little practical interest unless accompanied by a statement of the numbers of the population amongst whom they occurred. The shortest of conferences with the Ministry should have conveyed this axiom. The report is intended to "furnish an approximate basis for estimating the variations in the extent of the risks from period to period," but how can anybody estimate the variations if he is merely told that in one year there were 946 deaths and 860 in another? It is necessary to know how many British seamen there were in the service in each of these years. The President of the Board of Trade said in March that the Board had under consideration the

DEATHS IN THE MERCHANT MARINE IN 1923.

—	Numbers of deaths.			Per 1000.				
"First crews," total	British, 167,794.	Foreign, 11,262.	Lascar, 55,935.	British, 1922.	British.	Foreign.	Lascar.	Royal Navy, 1922.
Equivalent of a single death	—	—	—	0·005	0·006	0·089	0·018	0·0103
Cholera	—	—	3	0·015	—	—	0·02	—
Dysentery	10	—	5	0·04	0·06	—	0·09	—
Enteric	19	—	5	0·11	0·11	—	0·09	0·04
Influenza	3	—	—	0·06	0·02	—	—	0·12
Malaria	25	—	12	0·16	0·15	—	0·21	0·02
Plague	—	—	—	0·005	—	—	—	—
Pneumonia	50	3	56	0·25	0·30	0·26	1·00	0·25
Small-pox	4	—	2	0·02	0·02	—	0·04	—
Tuberculosis (all)	29	8	42	0·28	0·17	0·71	0·75	0·37
Venereal diseases	—	—	—	—	—	—	—	0·04
"Other infections"	15	3	8	0·12	0·09	0·26	0·14	0·13
Beri-beri	2	1	9	—	0·01	0·09	0·16	—
Cancer	6	1	2	0·03	0·04	0·09	0·04	0·09
"Other constitutional"	6	—	1	0·04	0·04	—	0·02	—
Diseases of the—								
Nervous system	31	3	10	0·20	0·18	0·26	0·18	0·17
Circulatory	53	6	19	0·34	0·32	0·53	0·34	0·11
Respiratory	16	2	11	0·09	0·09	0·17	0·20	0·13
Digestive	52	6	15	0·23	0·31	0·53	0·27	0·21
Urinary and generative	15	—	4	0·11	0·09	—	0·07	0·07
Other: ill defined and unknown	26	6	29	0·14	0·15	0·53	0·52	0·13
Alcohol	32	3	—	0·22	0·19	0·26	—	0·04
Heat-stroke	8	—	7	0·06	0·05	—	0·12	0·02
Homicide	5	—	6	0·03	0·03	—	0·11	—
Suicide	35	5	17	0·18	0·21	0·44	0·29	0·11
Casualties to ships	188	6	135	1·34	1·12	0·53	2·40	
Accidents on board	136	15	51	0·91	0·81	1·33	0·91	1·32
" on shore	94	5	1	0·69	0·56	0·44	0·02	
Total	860	73	450	5·67	5·13	6·48	8·01	3·44
Alcohol	32	3	—	0·22	0·19	0·26	—	0·04
Diseases	362	39	233	2·24	2·16	3·43	4·14	1·94
Injuries	466	31	217	3·21	2·78	3·74	3·84	1·46

[1] THE LANCET, 1924, ii., 981; 1925, i., 783.

modifying of the classification of diseases in the statistics it issues of the deaths of seamen, yet it has evidently decided to adhere to that originated by the great William Cullen (Professor of Medicine in Edinburgh from 1755 to 1790), which, since the re-birth of medicine in the "seventies" of last century, has been deserted by all the best authorities and by most Government departments. If this organisation of laymen has the self-confidence to stand, with no medical officer's signature to support it, against all educated medical opinion as regards classification of disease, may it not also have its own private standards in preventive medicine? It is to be hoped that is not why Lascar seamen go on having three times as many deaths from tubercle as have British seamen, who, under the Board of Trade, have 60 per cent. more statutory space in ships. The Board of Trade appears to be recognised by the Prime Minister as in charge of the health of seamen. It does provide for the treatment of their diseases and for drugs to heal them when sick, though it has resigned the treatment of their venereal diseases to the Ministry of Health. But the Board publishes no annual report on the health of the 250,000 merchant seamen in its charge, and can anyone believe that it takes its responsibility seriously? That responsibility should undoubtedly be transferred, as the Royal Sanitary Institute suggested last year, to the Ministry of Health.

TWO YEARS' WORK IN IRAQ.

REPORT OF INSPECTOR-GENERAL OF HEALTH SERVICES.

THE Inspector-General of Health Services in Iraq has issued from Baghdad his report for 1923 and 1924, in which he claims that in spite of many difficulties satisfactory progress has been made by his department. Schemes for making local authorities responsible for their hospitals and health work have fortunately been abandoned, and the central government pays for the upkeep of the whole service, which ensures that there shall be none of the local weak links whose inefficiency may prove fatal in an epidemic. At the end of 1923 the civil health service maintained 1170 beds; there are now 18 hospitals and 32 dispensaries, and the Royal Hospital at Baghdad, with 250 beds and a large out-patient department, has become a most valuable medical centre with excellent facilities for treatment and teaching. Other hospitals are making progress and the new Maude Memorial Hospital at Basrah, which will have 120 beds, will be the best for its size in the country. The authorities intend gradually to build up a service staffed by Iraqi doctors, but it is extremely difficult to get candidates, and the local doctors do not take kindly to travel amongst the tribes, which is a most valuable part of the work done by British surgeons. Three-quarters of the population of 3,000,000 are tribesmen and the usefulness of specialists at Baghdad depends on the persuasive ability of outlying workers. This nomadic character of the people makes it hard to secure vital statistics, and these can only be given for the great towns. Here the figures for births are unreliable because the people neglect notification on principle, remembering that the Turkish officials used the information they thus obtained for conscription for the army.

Infectious Diseases.

Under Turkish régime epidemics were controlled by the inefficiency of transport. Now the railways which connect Baghdad with Basrah, Shergat (70 miles south of Mosul), and Khanaqin, and the motor routes to Damascus, Beirout, and Teheran enable diseases to spread up and down the country in a day or two. Iraq is full of holy places and the pilgrims are an additional problem, since for political reasons it is not always possible to stop their movements. For example, during an epidemic of cholera at Karbala in 1923 90,000 pilgrims came to the town; but although they could not be stopped nearly all were inoculated. In the 1923 cholera epidemic roughly 300,000 inoculations were done by the Service—vaccine had to be prepared in Baghdad—and their success "affords a very definite proof of their value." This epidemic showed itself first at Abadan in Persia, 30 miles below Basrah, and here there were 961 cases with 911 deaths in about six weeks, out of a population of 6000. Then it spread to Basrah, which has over 50,000 inhabitants; but the preventive measures adopted before the disease had got a grip on the town reduced the number of cases to 605; there were 436 deaths. The most urgent need was to save Baghdad from an epidemic, and by means of traffic control, inoculation, and the establishment of segregation camps this was achieved; in the whole of Iraq there were only 1640 cases with 1100 deaths.

Plague.—There were 787 reported cases of plague in Iraq in 1923 and 523 in 1924. The epidemic in these two years was not exceptional, as the disease appears yearly in Baghdad and Basrah, and sporadically elsewhere. It is impossible to ensure that plague-infected rats will not occasionally gain access to river boats, and the railway presents a further problem which is apparently insoluble. The carriage of grain by rail is essential for the commerce of the country, and whatever precautions may be taken for cleansing railway stock it is obviously impossible to prevent rats gaining access to wagons at some part of the loading or shunting operations or during their passage up or down the line. The country is therefore faced each year with the possibility of local epidemics. The disastrous outbreak in 1918 at Amara, where 500 cases occurred in a population of 12,000, may be taken as an example. The possibility of similar epidemics is greatly increased by the extension of the railway from Baghdad to Kirkuk and its proposed extension to Mosul. The value of plague vaccine as a protective measure and in reducing case-mortality is definitely shown in the report; 300,000 inoculations have been given in Baghdad during the last six years without accidents; although the reaction is severe inoculation is willingly accepted by all classes except the most ignorant, and the M.O.H. of Baghdad has strongly urged that it be made compulsory whenever plague appears in a town. It is doubtful, however, if this could be enforced by the Iraq Government.

During the cold wet winter seasons of 1923 and 1924 there have been small epidemics of pneumonic plague in which the infection occurred from mouth to mouth or by contact with corpses. These outbreaks are especially interesting in view of the opinion, now gaining ground, that pneumonic plague differs from bubonic plague through the action of a symbiotic organism such as the bacillus of pneumonia. The two forms of plague occurred together, and "their origin was undoubtedly from bubonic plague cases in Baghdad, the virulence of which had become modified by some factor connected with the climatic conditions." The mortality of the pneumonic variety was 100 per cent. The bubonic mortality varies; it was 85·7 per cent. in 1921 and 55·1 per cent. in 1923.

Small-pox is endemic amongst the tribes and occasionally becomes epidemic in the towns. Vaccination is compulsory, but although even the wildest tribes recognise its value more than is done in England, the law is hard to enforce owing to the carelessness of the people and inaccurate birth notification. Over 80,000 vaccinations were performed in 1923 and now eight travelling vaccinators have been appointed. *Measles* is always present in some part of the country; in 1924 there were 1347 reported cases and this is considered an epidemic year. There have been only a few cases of *typhus*, and these are attributable to pilgrim traffic from Persia, where the disease is prevalent. *Enteric group diseases* occurring in Iraq are fortunately not usually very severe; 158 cases were reported in 1923 and 134 in 1924. A progressive increase in the number of cases of *tuberculosis* is reported yearly. There were 178 in 1921, 398 in 1922, 503 in 1923, and 819 in 1924. The general opinion is that the increase is only apparent and is due to better notification of cases and to increased confidence in medical institutions, but it is also possible that a proportion of the increase is actual and is due to a lower standard of living now that the population have lost the free flow of money that came to them from the British Government during and after the war, and are resuming their harder but more normal existence. *Anthrax* from time to time occasions epidemics of varying severity amongst sheep and cattle, but is comparatively uncommon amongst the Iraqi who live in close contact with them. Malignant pustule has a stereotyped treatment amongst the tribes. The carbuncle is surrounded by a wall of dough, the centre of which is filled with gunpowder and lighted; the process is repeated until the burning gunpowder produces pain, after which the burned area is left to heal. This treatment is often efficacious, the disease in Iraq being of low virulence.

Schistosomiasis.—Bilharzia is probably the commonest disease in Iraq, and about 90 per cent. of the population of the southern half of the country live in localities where they are exposed to infection. In these areas the incidence is from 20–100 per cent., and in some places to pass blood in the urine is considered normal. Till complications supervene the inhabitants will not submit to treatment, and even then they are indifferent and think the benefits of a long course of antimony injections not worth the trouble. Schemes for eradicating the water-snail which is the intermediate host involve the temporary closing of canals and consequent loss of crops, and it is doubtful if they could be carried through. *Malaria* roughly corresponds in distribution to bilharzia—that is, it favours the marshy and irrigated areas. The health service annually treats some 45,000 persons, but these are only a small fraction of those affected, and the treatment can seldom be more than palliative. Perhaps 20 per cent. of the population of Iraq (600,000 persons) require treatment, and about 20,000 lb. of quinine would be needed annually for merely palliative treatment. This would involve an expenditure of Rs.600,000 per annum,

which is at present out of the question; in 1923 and 1924 a total of 6000 lb. distributed was the most that could be paid for. Radical antimalarial measures are expensive, and large drainage operations would deprive many of the population of their means of livelihood (e.g., rice and date cultivation). Further activities against the disease must therefore wait until the Government can afford to distribute more quinine. The report gives an interesting account of an apparent epidemic of malaria in 1924 which was possibly an infectious fever of the nature of influenza which determined or aggravated attacks of malaria. *Leprosy* is widely spread throughout the country, but probably the total number of cases in Iraq is not more than 300. Treated as outcasts amongst the tribes, they drift into the large towns; it is rarely possible to trace any given case to any other. The establishment of a leper colony presents almost insurmountable difficulties—financial, tribal, racial, and religious.

The Work of Health Service Institutions.

Although a holy country to a large section of the Mohammedan world, Iraq does not attract charitable endeavour, in contrast to Palestine, where two-thirds of the lavish medical facilities owe their existence to charity. Practically all the public hospitals and dispensaries have to be maintained by the State. The work is limited by lack of money, but in two years there have been nearly two million out-patient attendances, and in 1924 15,500 cases were treated in hospitals. The care of the aged, infirm, and incurable is impossible. The first-class hospitals at Baghdad, Basrah, and Mosul perform between 2000 and 3000 major operations yearly, but such operations are practically limited to hospitals in charge of British surgeons. Two ophthalmic surgeons are employed—at Basrah and Baghdad—and a great deal of work is being done; but the field is enormous. About 80 per cent. of the population of Baghdad suffers from trachoma, and as a charge of 4 annas a week reduces attendances at clinics by three-quarters, it is again clear that the Government will have to pay if things are to improve. X ray facilities are provided in the three great towns; there is a chemical department at Baghdad, and a very competent pathologist in charge of a laboratory there, who also supervises the antirabic and vaccine lymph institutions. Rabies is widespread in Iraq, and cases of dog, jackal, and wolf bites present themselves in a steady stream. The report gives details of a series of interesting cases showing a considerable measure of success in treatment.

Venereal diseases are extremely common amongst all classes, but the manifestations are milder than in Europeans. Of 280 registered prostitutes examined at Basrah 270 showed infection; brothels are mainly under supervision and preventive measures are encouraged. *Opium-eating* is a well-established practice, especially in the centres of Persian influence, and opium-smoking is common at pilgrimage towns. The tribes use opium chiefly for medicinal purposes, but under Turkish and Persian influence the morphine habit is growing commoner in towns, and cocaine is taking hold of the educated classes.

Medical and Dental Practice.

With two exceptions all the private medical practitioners in the country have settled in the three great towns, where there are far too many of them. A huge influx of doctors comes from Syria, where many poorly qualified men are yearly turned out on a country which has an excess of them already. Turkey is closed to them, so they exploit Iraq. The consequence is that charlatanism and questionable practices are becoming increasingly rife, and that Iraqi doctors find it hard to live. There is as yet no Iraqi medical school. Dressers and hakims are perforce permitted to practise under nominal supervision in some areas, and more or less qualified dentists are allowed to practise with reservations. The country suffers from a lack of trained midwives; but conditions are improving in the towns, and in most of the country districts there are one or two midwives who may be regarded as fairly clean in their methods. Unfortunately, in the East very few respectable women will take up this work, and of the middle-aged women available very few can read or write, and those who cannot are somewhat insusceptible to training.

MEDICAL MISSION CONFERENCE.

THE meeting of the Medical Mission Advisory Board of the Conference of British Missionary Societies at the Bible House, Queen Victoria-street, London, on Sept. 23rd, occupied most of its time in discussing the problems of passing on to the national churches the responsibility and support of mission hospitals, and also the question of the strict adherence to a high standard of nursing, especially in a country like China. Dr. Hugh H. Weir, medical secretary of the S.P.G., who acted as chairman, in initiating the discussion, said that hospitals should not be looked upon merely as humanitarian institutions or even as valuable instruments in bringing forward the Christian gospel, but as instruments for perpetuating the Incarnation. Their tone was therefore the all-important factor, and the primary question to be borne in mind was how far this was being created and how far it would be continued in other hands. Dealing with obstacles to be overcome, Dr. James L. Maxwell, general secretary of the China Medical Missionary Association, said that the financial ones could largely be met by further accommodation for paying patients, but that the question of qualified doctors was more difficult owing to the fact that there were now only seven or eight properly equipped Christian medical schools turning out some 20 men a year to supply the need of China's 300 mission hospitals. Dr. J. H. Cook, medical secretary of the C.M.S., speaking from his experience in Africa, emphasised the need of spiritual, intellectual, and social fitness of the native doctors before institutions could be handed over. The question raised by Mr. W. McAdam Eccles, F.R.C.S., as to how far foreign doctors could continue on the staff after the handing over of a hospital was not answered in the course of the discussion, while the problem which perplexed many, especially some of the women doctors from India, was the advisability of native doctors on the hospital staff also having a private practice. It was felt by many that this was not advisable. Dr. H. T. Chiang, a Chinese guest from Hankow, said that the time was not ripe for handing over hospitals to the Chinese Christian Church. He advocated Anglo-Chinese boards of management to turn the institutions into community hospitals, and the gradual reduction of grants-in-aid to provoke local responsibility. At the afternoon session the actual discussion was almost confined to the standard of nursing in China. Some pleaded that this was too high, too "Americanised," and was a bar to the preparation of sufficient nurses for the urgent needs of the country. It was evident, however, that the majority did not wish to see standards lowered, and as was pointed out, this was the express wish of the Chinese themselves, who formed to-day 75 per cent. of the membership of the Nursing Association of China.

REFUGEES IN MACEDONIA.

THE situation of refugees at Salonika is still serious. It is estimated that in this city alone there are 80,000 refugee widows and children, many thousands of whom are solely dependent on charity. The Government's allowance to them is 1 drachma (about ½*d.*) per day, and bread costs 8 drachmas a loaf. In general town-dwellers are worse off than peasants in these unaccustomed conditions; but those refugees who have been sent to outlying parts of Macedonia as agricultural tenants are in serious plight as they received their land too late to sow crops and the Government is not going to distribute grain for food as it did last year. Many crops have also failed through storms. At Salonika refugees are still crowded in mosques, schools, and warehouses. In the barracks a family of six or seven often occupies a floor space of 3 or 4 square yards. Many have been living like this for three years and are still wearing the remains of the clothes in which they arrived. Malaria is not so bad as last year, but in one camp there are 400 cases, and 150 cases of dysentery. The "Save the Children Fund" is the only organisation rationing the people in the Salonika area and is feeding some 9000 people there, but has to turn many away. Its milk stations are greatly appreciated and clothes are badly needed. In order to maintain and increase its services it urgently requires help.

TO CHIROPODISTS AND OTHERS.

THE Society of Chiropodists has reprinted[1] a series of lectures delivered by Mr. Lake, which cover an extensive area, and they should appeal to a wider public than that comprised by the Society. They would form, in fact, an admirable introduction to anyone starting to study medicine, or indeed to anyone interested in the progress of medical science. The development of bacteria, the principles of asepsis, and the causes and processes of disease are dealt with in a masterly manner. The more special articles on the mechanism of the foot and its deformities are of value as an introduction to this branch of orthopædics. But the lectures cover the field from the early history of man to the latest advances of the chemistry of colloids. Indeed, the most interesting lecture is that on the Antiquity of Man, where the author shows a quite exceptional knowledge of his subject. The book is really a volume of occasional essays and we would recommend the pleasure of reading them to many whose interest in chiropody is limited to their personal comfort.

[1] Lectures to Chiropodists. By Norman C. Lake, M.D., M.S., D.Sc. Lond., F.R.C.S. Eng., Surgeon to Out-patients, Charing Cross Hospital. London: Incorporated Society of Chiropodists. 1925. Pp. 246. 10*s.*

OBLITERATION OF TATTOO MARKS.

A CORRESPONDENT inquired in a recent issue of THE LANCET as to what method could be used to remove tattoo marks on a girl's legs which were revealed by the fashionable diaphanous stockings. It is said that tattooing disappears before civilisation; but here is an unfortunate case where it has merely become more apparent. To a young woman of the period it would, of course, be supererogatory to point out the possible uses of superimposed pigments: presumably they are for some reason inapplicable or unstable in this particular case. It has been suggested that the obvious solution is to re-tattoo each mark with flesh-coloured pigment, but apart from this unattractive method, there are various other courses for which success is claimed. From Messrs. Thos. Christy and Co., of 4, Old Swan Lane, Upper Thames-street, E.C. 4, an account reaches us of the virtues of a preparation named Extaetol, which is made in Germany. The pigment is brought into contact with the remedy by application after pricking the skin with needles over the marks. The ointment removes part of the corium and the active process takes about six days; the instructions should be carefully considered before ordering. Skillem recommends in the *Philadelphia Medical Journal* (June 18th, 1898) glycerole of papain as the most efficient and least painful agent. It is pricked in over the tattoo marks after desensitisation with ethyl chloride spray. The following has also been suggested, but cannot be guaranteed. Salicylic acid which has been massed with glycerine to the consistence of dough is applied over the marks with a compress and strips of adhesive plaster and is allowed to remain in contact for some time. After the first dressing the epidermis over the marks is removed, and a fresh application of the salicylic paste applied. Usually, the second application removes the marks, but sometimes it is necessary to make a third. The treatment must be applied very cautiously.

APOPLEXY OF THE SOFT PALATE.

As long ago as 1892 Le Jeune, of Boulogne, drew attention to a condition of small hæmatomata of the soft palate which he called "apoplexie de la luette." Bosviel in 1911 recorded a similar case under the title "apoplexy of the tonsillar fold." The swellings are produced by the spontaneous rupture of small vessels and subsequently break through the mucous membrane and cause a hæmoptysis. There is little or no danger involved, but the patient may be gravely alarmed or subjected to considerable discomfort. MM. J. Garel and A. Gignoux, writing in a recent issue of the *Journal de Médecine de Lyon*, regard the condition as not uncommon, although seldom recorded. They have collected 17 cases. It may arise even during sleep, as in a case of Bosviel's, but more usually in the course of a meal, evidently as the result of contraction of the palate. The patient suddenly experiences discomfort in the throat, and if the hæmatoma be a large one the sense of stifling may be agonising and may continue for several hours. It is immediately relieved by opening the tumour with a bistoury or galvano-cautery. More often the hæmatoma is the size of a grape-stone and ruptures by itself in a few minutes, the lacerated mucosa cicatrising in a few days. The authors have not been able to determine the ætiology; trauma undoubtedly plays a part in many instances. A man who was liable to subcutaneous ecchymoses developed a large hæmatoma on the anterior pillar of the fauces while this was being lightly massaged to expel the secretions from his tonsillar crypts. There is thus an analogy with the ecchymoses produced in the vocal cords by a vocal effort. On the other hand, there are cases where no trauma can be traced, and there seems to be a certain individual tendency to the phenomenon. One of the cases, a woman aged 30, had had a palatal hæmatoma every two or three months for 12 years, usually coinciding with the menstrual period. Other cases had experienced it on several occasions. As the false hæmoptysis may continue for several hours much unnecessary alarm may be caused by this trifling accident, and it is well for the practitioner to bear in mind the possibility of its occurrence among his patients.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

Tuesday, Oct. 6th.

ORTHOPÆDICS: at 5.30 P.M. (Cases at 5 P.M.)
Presidential Address:
Mr. A. S. Blundell Bankart: The Physiology of Muscular Action.
A discussion will follow.
Cases may be shown, either in connexion with this subject or otherwise.

Thursday, Oct. 8th.

NEUROLOGY: at the Middlesex Hospital, Berners-street, W. 1, at 8.30 P.M.
Presidential Address:
Dr. Campbell Thomson: The Work of Sir Charles Bell in Relation to Modern Neurology.
Drawings and specimens will be exhibited.

Friday, Oct. 9th.

CLINICAL: at 5.30 P.M. (Cases at 5 P.M.)
Cases:
1. Dr. Parsons-Smith: Two Cardiac Cases.
2. Dr. Douglas Firth: Bronchiectasis.
3. Dr. Bernard Myers: (*a*) Transposition of Viscera. (*b*) Morbus Cordis of Unknown Origin.
4. Dr. L. S. T. Burrell: (*a*) Clubbing of Fingers and Toes. (*b*) Abdominal Tumour.

OPHTHALMOLOGY: at 8.30 P.M. (Cases at 8 P.M.)
Discussion:
Penetrating Injuries of the Eye.
Opener:
Mr. Gray Clegg.
Other Speakers: Mr. G. H. Pooley, Mr. Harry Lee, Mr. Goulden.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, Oct. 5th, to SATURDAY, Oct. 10th.—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C. Special course in Laryngology, Rhinology, and Otology. Clinical Course and Operative Surgery Course, of which one or both may be taken. Operative Surgery Class daily 9.30 to 11.30. Clinical Course most days, 9–5. In- and Out-patient Operations, Clinics, and Lectures.—LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, Endsleigh-gardens, N.W. First two of a series of eight clinical demonstrations, Tuesday and Thursday, at 2, by Dr. G. C. Low and Dr. Manson-Bahr. The subjects considered will be the more important diseases of tropical countries, illustrated, if possible, by cases.—ROYAL FREE HOSPITAL, Gray's Inn-road, W.C. Lecture-demonstration on Treatment by Electro-Therapy on Wednesday, Oct. 7th, at 5.30, by Dr. C. B. Heald.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C. 1.

POST-GRADUATE COURSE: OCTOBER-NOVEMBER, 1925.

CLINICAL LECTURES AND DEMONSTRATIONS.

MONDAY, Oct. 5th.—2 P.M., Out-patient Clinic: Dr. Hinds Howell. 3.30 P.M., Paraplegia and its Treatment: Dr. Riddoch.
TUESDAY, Oct. 6th.—2 P.M., Out-patient Clinic: Dr. Walshe. 3.30 P.M., Epilepsy: Dr. Adie.
THURSDAY, Oct. 8th.—2 P.M., Out-patient Clinic: Dr. Kinnier Wilson. 3.30 P.M., Progressive Muscular Atrophy: Dr. Martin.
FRIDAY, Oct. 9th.—2 P.M., Out-patient Clinic: Dr. Adie. 3.30 P.M., Pituitary Tumours: Mr. Sargent.
The Fee for the Course, including Pathology lectures, is £5 5*s*. For those who hold Perpetual Tickets the fee is £3 3*s*.

COURSE OF LECTURES AND DEMONSTRATIONS ON THE PATHOLOGY OF THE NERVOUS SYSTEM.

THURSDAY, Oct. 8th.—12 noon, Neuronal Degeneration: Dr. J. G. Greenfield.

COURSE OF LECTURES AND DEMONSTRATIONS ON THE ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM.

MONDAY, Oct. 5th.—12 noon, (*a*) The Significance and Evolution of the Nervous System. (*b*) Methods of Investigation: Dr. J. L. Birley.
Dr. H. J. Macbride will give a COURSE OF EIGHT CLINICAL DEMONSTRATIONS, CHIEFLY ON METHODS OF EXAMINATION OF THE NERVOUS SYSTEM, in the Wards at 10 A.M. on Tuesdays and Fridays, if sufficient entries are received. The fee for this Course will be £2 2*s*.
Mr. Armour and Mr. Sargent operate at the Hospital on Tuesday and Friday mornings at 9 o'clock, or at such other times as may be announced.
Any part of the Course may be taken separately. Special arrangements will be made for those unable to take the whole Course.
Fees should be paid to the Secretary of the Hospital at the Office on entering for the Course.
J. G. GREENFIELD, Dean of Medical School.

UNIVERSITY COLLEGE, London.

WEDNESDAY, Oct. 7th.—5.30 P.M., Prof Fritz Weigert (Leipzig): The Photochemistry of Vision (public lecture in English). 7 P.M., Mr. A. H. Barker: Public Lecture on the Heating Equipment of a Large Hospital.

ST. JOHN'S HOSPITAL, Leicester-square, W.C.

TUESDAY, Oct. 6th.—5 P.M., Dr. S. E. Dore: Physiology of the Skin.
THURSDAY.—5 P.M., Dr. J. M. H. MacLeod: Anatomy of the Skin.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.

TUESDAY, Oct. 6th.—4.15 P.M., Dr. F. E. Tylecote: Prognosis and Treatment of Bronchitis.
FRIDAY.—4.15 P.M., Dr. E. M. Brockbank: Pre-Existing Disease as a Cause of Disablement in Workers.